

May 1938

TECHNOLOGY REVIEW

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technology review

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THE TABULAR VIEW

EACH year a committee of the American Alumni Council, a body made up of alumni officers of American colleges, appraises magazines that are published by these colleges. The Review has been encouraged many times by awards received from this group, and this year it again was listed among those magazines judged to have done well some type of journalistic job. The citation read: "The American Alumni Council awards first place to The Technology Review for the best use of type, heads, and captions in the magazine awards contest." ¶ It is worthy of note that the magazines published at scientific and engineering institutions rank high among graduate magazines. The journals published by Case and Lehigh, for example, are executed with great professional competence. While many liberal arts colleges publish first-rate magazines, it is nevertheless striking that the technical magazines have progressed so far in appearance and contents — and in advertising volume.

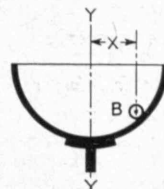
A STUDENT of mountain climbing and possessor of an extensive collection of literature on the subject, JOHN E. BURCHARD, '23 (page 307), writes with enthusiasm and understanding of the techniques and motives of mountain climbing. During those interludes when he is not practicing his profession as a housing engineer or carrying on such avocational work as the Technology Alumni Fund and Alumni Day, he gets in some climbing of his own. ¶ DR. HARRY R. DESILVA (page 309) is a member of the staff of the Street Traffic Research Bureau at Harvard University and has been associated with the development of the apparatus and methods he describes for testing driving competence. ¶ FREDERICK G. FASSETT, JR., as recorded on page 320, has just been elevated to the position of associate professor of English at the Institute. His understanding of the social significance of science is steadily deepening, as he continues the various papers he has written for The Review on this subject (page 312). Readers will doubtless recall his article, "Science and the State," which appeared in the April, 1937, Review, and also the article, "Science and American Literature" (February, 1937), of which Professor Fassett was coauthor. ¶ GEORGE R. HARRISON is director of applied physics and of the research laboratory of experimental physics at M.I.T. His article on the place of physics in modern life (page 315) is drawn from a book now being written by him on the practical applications of physics. In our first issue this fall (that dated November), we were privileged to present another chapter from this book, "Tomorrow's Telephones." Contributions from Professor Harrison in former years have included the articles, "Molecular Planning" (March, 1936) and "Hard-Headed Rainbow Chasers" (December, 1933). The Lowell Lectures this year in Boston, one of the most distinguished lecture series in America, included a group of lectures by Professor Harrison on the application of physics in modern life.

No. 7

Just for Fun!

A CHALLENGE TO YOUR INGENUITY

HERE is a curiosity from the field of speed indication. — A hemispherical bowl with a radius of 1 foot 1 inch is mounted on a central vertical shaft YY. A one-pound ball B with a radius of 1 inch is free to roll inside the bowl.



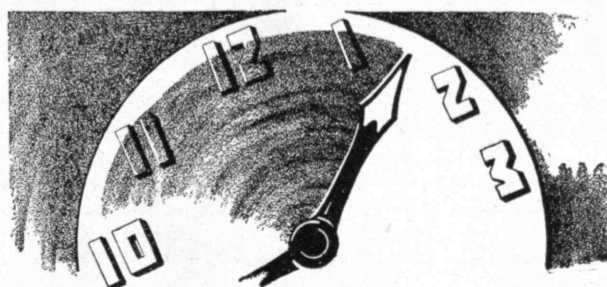
On what part of the bowl's surface will the ball tend to ride (i.e., what will be the value of x) if the bowl is spun at 50 R.P.M. about the YY axis? How do you explain this peculiar result? Show that x will increase to about 7 inches at a speed of 60 R.P.M.

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MAIL RETURNS

LETTERS AND PICTURES FROM REVIEW READERS

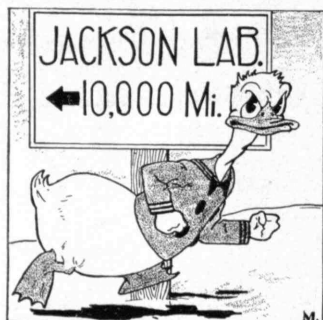
The Duck That Got Wet

FROM C. R. CARYL:

We were interested to note from the March 14 issue of *Time* that the "M.I.T. Review" of that month had carried a story about a duck that could not swim in water to which a wetting agent had been added. Since I am the "chemist" who made the duck sink (but did not roast him afterwards), you can understand my interest in obtaining a copy of your Review. . . .

*American Cyanamid and Chemical Corporation
Pittsburgh, Pa.*

The experiment described by *The Review* was performed in the Jackson Laboratory of the Du Pont Company and informally reported on November 17 in a local publication, under the heading "The Dye-Jest." We do not know whether Mr.



Caryl's experiment was prior to this, but we do have it on good authority that the Du Pont duck (whose subconscious portrait is reproduced adjacently) was eventually roasted, as *The Review* reported.

Said the Dye-Jester: "It seems that one member of the family *Anas Boschas* ran afoul of a group of prominent chemists and, for

experimental purposes, was placed in a barrel of water to which had been added one of our wetting-out agents. For a moment or two, the duck was in his glory, then he noticed a strange phenomenon — His feathers, usually water-repellent because of the film of oil which covers them, were becoming saturated! In a minute and a half he was as soggy as a dunked doughnut and the look of surprise on his face was akin to a Walt Disney caricature. Giving vent to a quack of alarm, the duck found himself forced to paddle vigorously to keep afloat. In eleven minutes he sank, only to be rescued and freed. With an angry wiggle of his tail feathers he ambled away from his inquisitors."

Stairways in Syria

FROM EDWARD A. ABDUN-NUR, '24:

I was interested in the caption of your picture of the cantilever stairway on page 263 of the April issue of *The Review*. Practically all stairways in Syria are of this type. Of course labor is cheap there. I have built many of them there — even circular ones cantilevered either from an outside stairwell wall or from a central pipe support. Over in that country they are made usually either of reinforced concrete with a terrazo covering or from slabs of limestone. I am sorry that when I was building them I did not feel it of enough interest (because they were so common, to take any pictures.

Billings, Mont.

Bored to Great Depths

FROM JOHN SLOAT, '33:

Last year, as consulting geophysicist for Union Oil Company of California, it was my good fortune to map by modern geophysical methods what has since become the deepest producing oil field in the world, at Rio Bravo, Calif. At present there are ten of the world's most expensive (that's California for you) oil derricks exploring this superdeep structure. The oil is of high gravity — such that the original well, costing \$260,000, paid for itself in a few months after completion. This is a clear-cut case of the success of modern geophysics.

I notice that someone is asking for an article on geophysics. Just wondered if you would be interested in the story of this discovery for *The Review*. I could furnish pictures, graphs, explanations of methods — your readers would be bored to great depths. . . .
Bakersfield, Calif.

Cover Club Communication

FROM GEORGE A. MAKAROFF, '26:



Many thanks for the extra copies and words of encouragement. Will try to make the cover again, as soon as I manage to print a few "successes" on 8 x 10 glossy. However, my photographic ego is getting the better of me, and I just can't resist mailing you my own favorite — "Night Under the Viaduct." (Note: Naturally it's the sun. Also, for some esthetic reason, I have reversed the negative. . . .)
New York, N. Y.

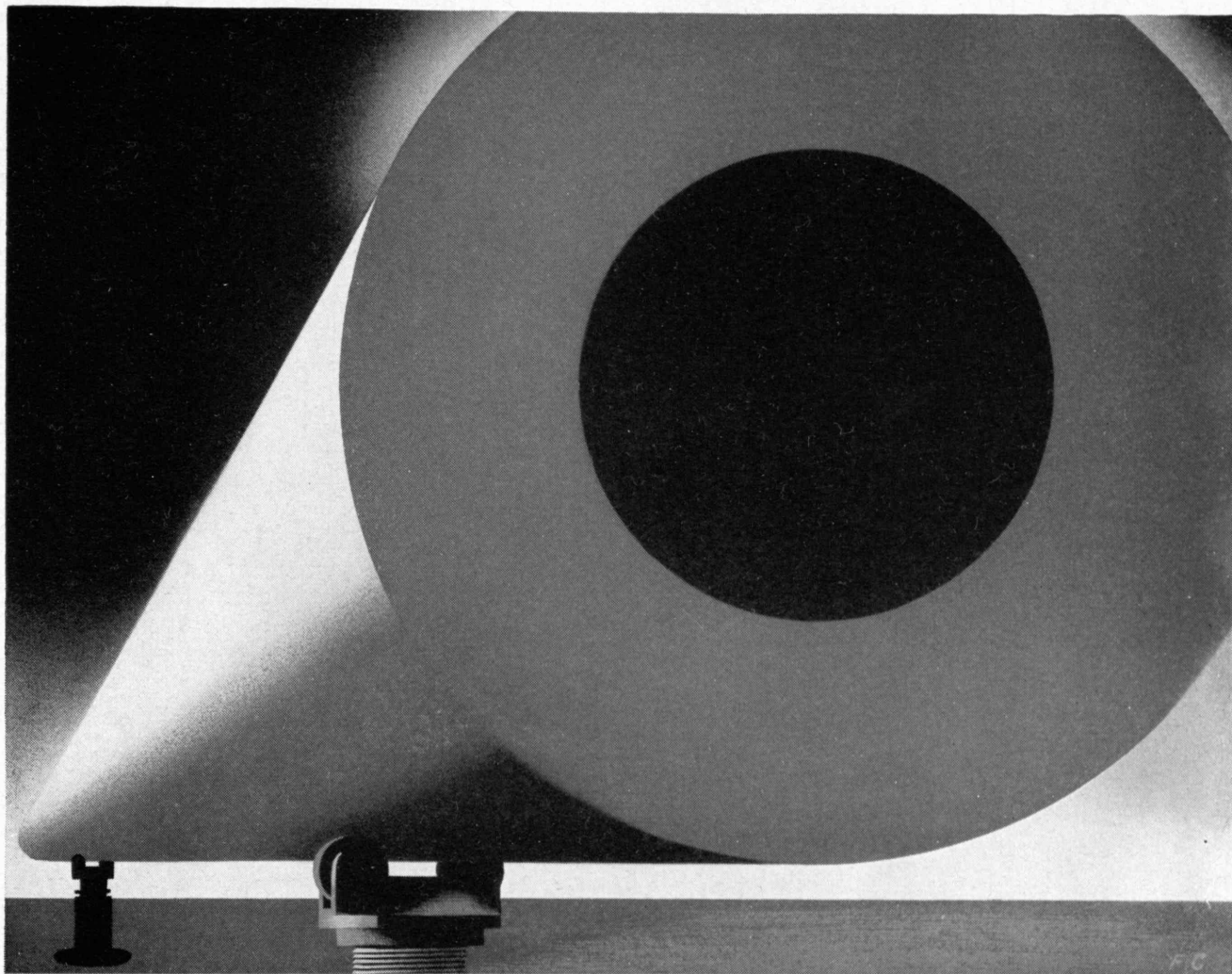
From Alaska

FROM RAY J. BARBER, '06:



President Charles E. Bunnell, pinning the Congressional Medal on Dr. Bramhall, '27, while Dean Barber, '06 (right), watches

Ervin Hicks Bramhall, S.B., S.M., Ph.D., '27, VI, has just received a Congressional Medal for distinguished service [for his part in the exploration of the Antarctic with Rear Admiral Byrd in 1933 and 1934]. The medal was awarded by act of Congress some months ago, but the presentation was made . . . at the University of Alaska, where Bramhall is professor of physics and head of the department of general science.
University of Alaska



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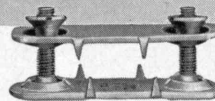
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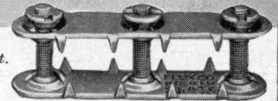
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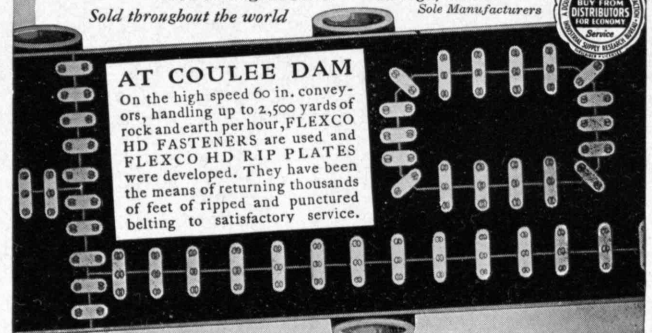
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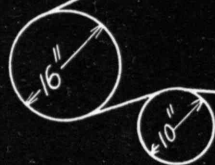
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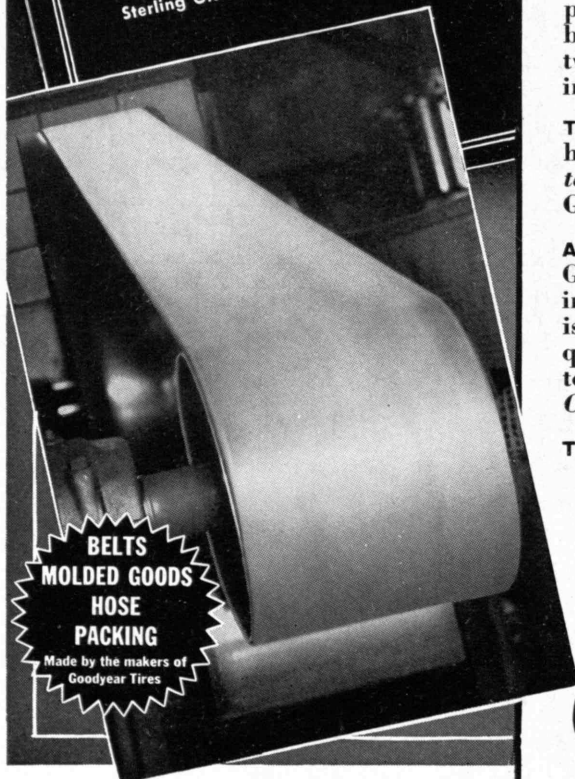
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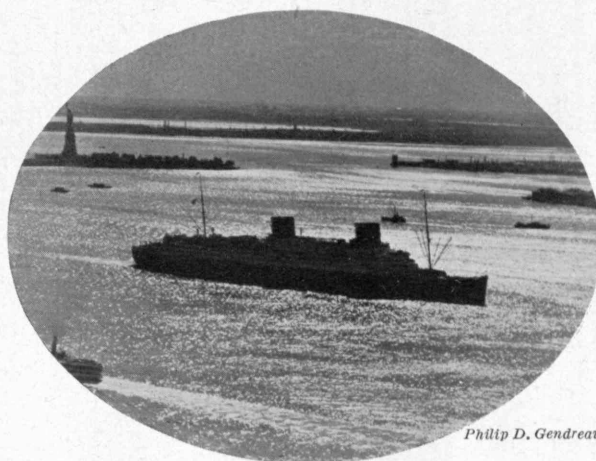
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Philip D. Gendreau

THE TECHNOLOGY REVIEW

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EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

VOL. 40, NO. 7

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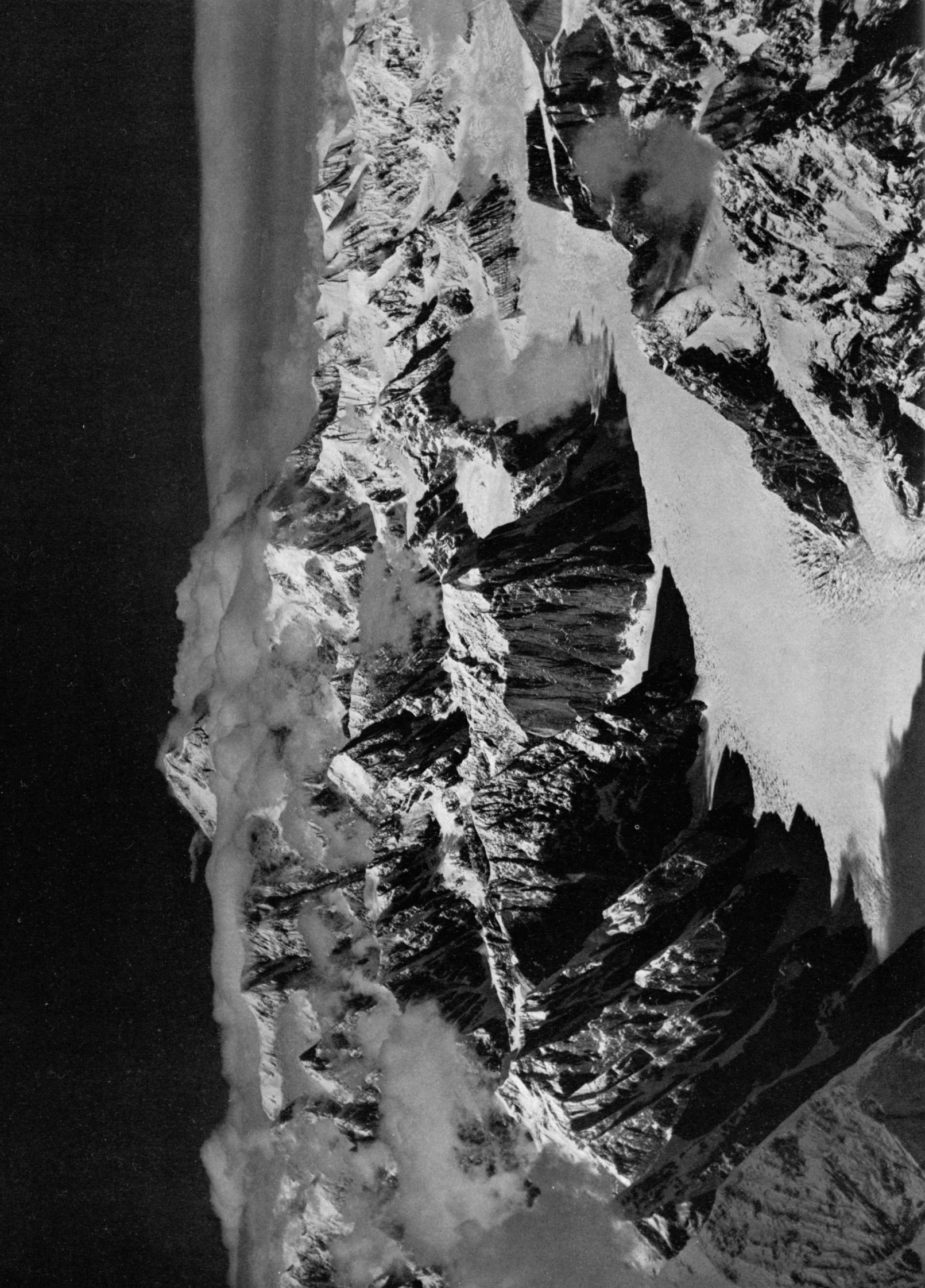
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THE TECHNOLOGY REVIEW

Vol. 40, No. 7



May, 1938

The Trend of Affairs

Sidelights on the Perennial Miracle

AT the time of the present writing, skunkcabbages are already in bloom in the swamps. Forsythias in the neighborhood of Boston have begun to show yellow in their buds. New maple sugar from Vermont, this season's crop, is on sale in the Boston market. The sugar has come from hard maple or rock maple trees which, at the time when they were tapped, had not yet bloomed or even shown any noticeable swelling of the buds. This new sugar is last year's sugar, photosynthesized from water and carbon dioxide by the energy of last summer's sunshine made effective for the purpose by the catalytic action of the green chlorophyll of last summer's leaves. When the cool weather of autumn came on, the sap retreated to the roots of the trees and there it left its sugar. Now, when the sap flows again, the tree is without leaves and is unequipped to carry on the processes of photosynthesis. But last year's sugar supplies the tree with material which it uses in the manufacture of new leaves with which it will again soon embark upon the business. A wise provision of nature endows the trees, like the squirrels and other creatures of the forest, with an instinct which impels them in the autumn to lay away the materials they need to commence the work of the following spring.

If one end of a narrow tube of glass is inserted into water, the water will at once rise in the tube. If the tube is extremely narrow like a hair (Latin *capilla*, meaning hair—hence “capillary”), the water will rise for a

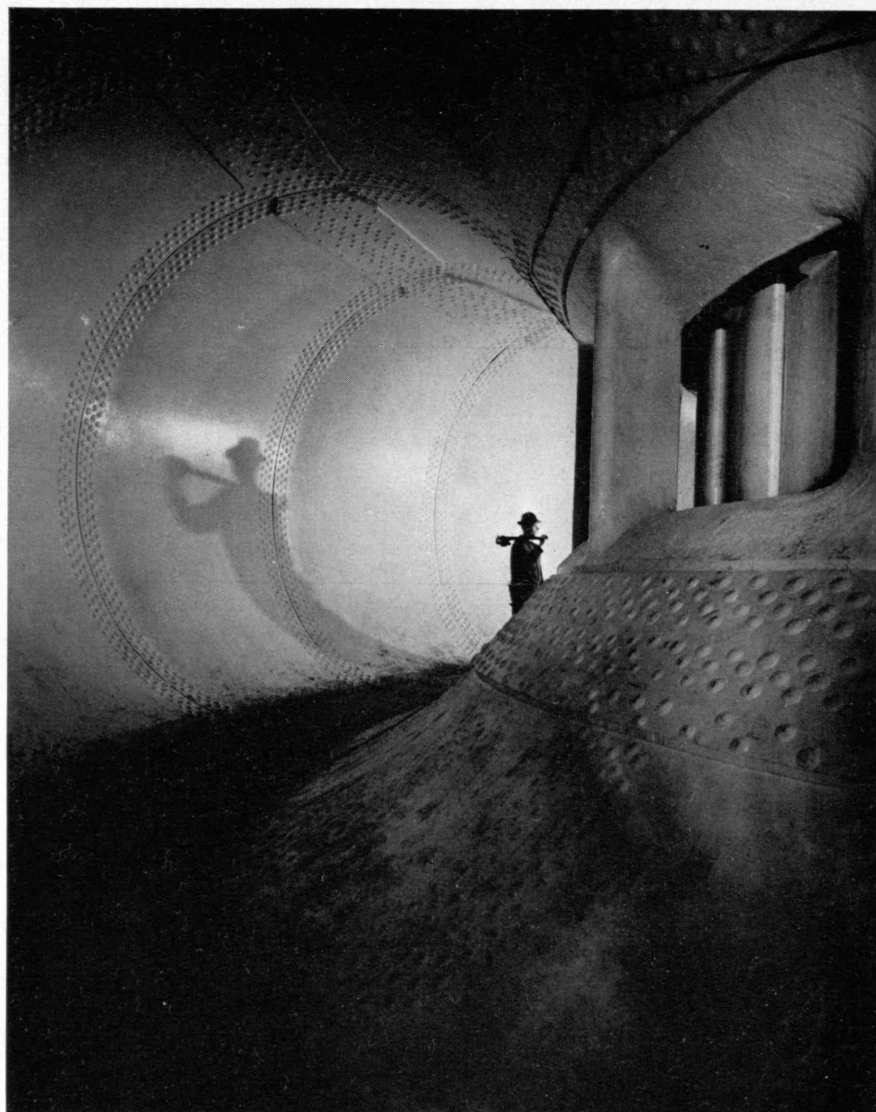
considerable distance. Capillary action accounts for the rise of a liquid, but once the liquid has risen, there is no

further tendency for it to move. Imagine a capillary tube of such length that, when one end is dipped into water, the water will rise in the tube and fill it completely. Experiment shows that there is no tendency for the water to flow out the other end. Imagine the upper end of the same tube bent in the form of a hook; though the tube is full of water, none of it will drip from the open end. Yet sap drips in spring from a grapevine which has been pruned and from an incision in the bark of a leafless maple tree. Therefore, though capillary action undoubtedly plays a large part in the economy of plants, it does not account for the flow of the sap, which moves because it has pressure behind it.

If water has risen in a capillary tube and is somehow removed from the upper part, more water will rise to take the place of that which has been removed, causing flow. The removal of water in this instance is, of course, accomplished by some means other than capillary action. And trees in summer are equipped with an apparatus, namely, the leaves, by which precisely this removal of water may be accomplished. Water evaporates from the surface of the leaves and more water is drawn up through the capillaries to take its place. The principle here may be illustrated by a simple and pretty experiment: Take a narrow capillary tube, the upper end of which widens to form a little cup. Dip the lower end into ink, so that the dark fluid rises through the length of the tube and into the bottom of the small cup. Now take the tube out of the ink and set it up with its lower end in a vessel of water. Put into the little cup, in contact with the ink which is there, one corner of a piece of filter paper which has previously been wet with water, arranging the paper so that the water on it may evaporate freely. As the water evaporates, the ink will be drawn onto the paper from the capillary tube, and colorless water will be drawn into the tube behind the ink. The line of demar-

MOUNT MCKINLEY,
ALASKA

◀ From a photograph by Bradford Washburn, Institute of Geographical Exploration, Harvard University



Charles Krutch

WITHIN THE SCROLL CASE

... of one of the two turbines at Norris Dam on the Clinch River in Tennessee. Water from the penstock passes through the wickets at the right, where it turns the propellers of the turbine

cation between the black ink and the colorless water can be seen to move up the tube. After a time all of the ink will be on the paper, while the tube will be full of water; still later the ink will have been driven to the outermost edges of the paper, where the evaporation is most rapid, and the paper will become white again, with the ink around its edges. Similarly, if the stem of a white rose is allowed to stay, say for half an hour, in a solution of some dyestuff and is then put into fresh water, the rose will finally appear with the color of the dyestuff along the edges of its petals.

Since the sap of a tree commences to flow before the tree has yet put out any leaves, evaporation through this medium can hardly be a factor in determining its movement. But the presence of sugar in the roots and the osmotic pressure which results when the snows melt and the roots are drenched with water, might appear to supply a sufficient explanation of the flow of the sap in early spring. If a lump of sugar is coated with

a skin of collodion or wrapped tightly in cellophane or any other semipermeable membrane and is then put into water, the water will pass through the membrane and dissolve the sugar — and will continue to pass through until equilibrium is attained. In practice, by the pressure of the continually increasing volume of the solution inside of it, the collodion skin would burst. If the skin were very strong indeed, the osmotic pressure within it at equilibrium would be sufficient to prevent more water from diffusing through. Thus, if the semipermeable sac containing the sugar were attached to an upright pipe, the liquid would rise in the pipe, and the pressure within the sac would be the pressure indicated by the height of the column. Osmotic pressures are enormous. A solution of three-quarters of a pound of cane sugar in a quart of water has an osmotic pressure of about 20 atmospheres, enough to send a column of water to a height of some 600 feet — higher than the tallest tree. It might seem to be something of this sort which causes the sap to flow. If the semipermeable root tendrils of the plant contain sugar and if the roots are wet, water tends to pass into them, to dissolve the sugar, and to force it upward into the veins of the plant.

Water passing into the roots dissolves the sugar and carries it up into the plant. The sugar is removed from the root tendrils.

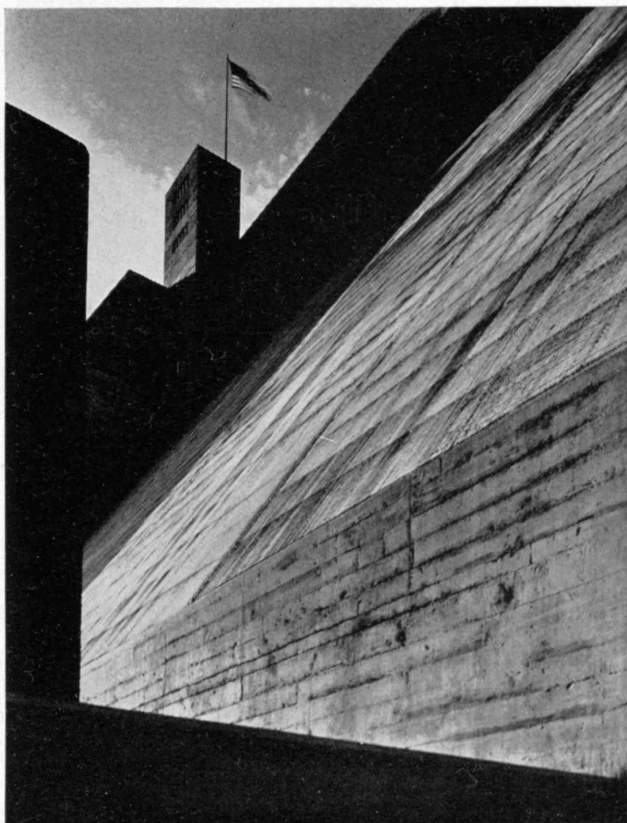
What then causes more water to come in and maintain the flow? To this question there seems to be no ready answer. The investigations of Dr. Philip R. White in the laboratories of the Rockefeller Institute for Medical Research at Princeton, N. J. — investigations for which he has recently received an award from the American Association for the Advancement of Science — have demonstrated that tomato roots may be grown apart from the rest of the plant and that these roots (which presumably contain no sugar, for they have been grown apart from the photosynthesizing green parts of the plant) can nevertheless produce pressures which are large enough to account for the movement of sap in the tallest trees. And there the matter stands at present. The science of plant physiology has been advanced greatly by the recent proof that the old explanations are inadequate. Meanwhile Dr. White and his colleagues are continuing their research with the hope that improvements in apparatus and technique will lead to new knowledge.

Do Flies Shun Blue?

WHETHER or not flies — house, horse, or blue-bottle — have any artistic sense can be of little interest to anyone but the flies. However, the observation that flies appear to dislike and even to shun rooms painted blue is of immediate personal interest to everyone who has ever had to share his ice cream with *Musca domestica*, the common housefly. Although the literature on the life and habits of flies sheds little light on the subject, there appears to be a well-founded belief in many countries that flies are unhappy in the presence of blue, particularly a medium or "implement" blue.

While traveling in France, G. B. J. Athoe, an English architect, found that the walls of most of the hospitals and clinics there are painted blue for the purpose of discouraging flies. Both architects and physicians in France supported the theory that a light blue is disliked by flies and is an effective method of keeping the insects out of sickrooms. Pursuing the subject further, Mr. Athoe found that abattoirs and factories built in Denmark by a distinguished Dutch engineer had bright blue interiors for the same purpose, a practice which the engineer had found successful in the kitchen of his own house.

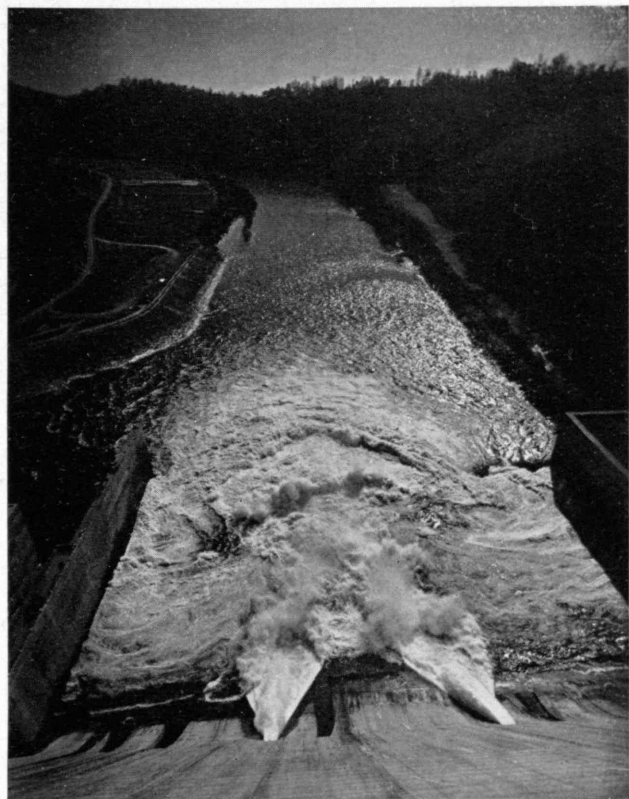
A Frenchman some years ago conducted experiments on the color preference of flies, using a box, the walls of which were covered with squares of paper of various colors. Observations were carried on over a considerable period of time, and the box was turned in different positions in order to avoid error from other causes. After several days a count of the flies in the box showed that 18 of the insects had chosen to rest on a clear green paper. The next largest number had chosen rose for their resting place, with clear yellow, azure, and clear red



Charles Krutch

HARNESSING THE WATERS

Above. Norris Dam's masses of concrete tower over the Clinch River (below). In time of flood, the spillway has confined a waterfall greater than Niagara



following in that order. Only one fly was found on the ultramarine blue. No conclusions were reached as to why flies chose azure blue rather than ultramarine.

As a result of his inquiries the English architect found that bright blue walls and ceilings have been found effective for keeping flies away in a number of English homes. One shrewd Englishman, suspecting that most flies enter the house via the kitchen, painted the walls and ceiling of that room powder blue, and found that this color barrier kept the rest of the house free of the flying pests. This practice is common in some South American countries and in parts of the West Indies where, in many instances, fly screens are not considered necessary when blue is used as a decoration.

Yellow Jack

SHARING the doubtful honor only with smallpox, if at all, yellow fever holds, in the history of the Republic, a position analogous to that of the plague in England. Our early civic history is crossed by its story. Freneau, the poet of the Revolution, memorialized it. Our first novelist, Brown, drew on it for background and for plot. Colonial and early Federal newspapers abound in references to it. The heroism of Walter Reed's group is a later focus of interest in this ill.

For many reasons, news from the Rockefeller Foundation concerning its war on the disease always is of headline importance. President Raymond B.

Fosdick's review of the foundation's work for 1937 stresses the importance of mosquito control as reinforced by the unpleasant knowledge that jungle yellow fever exists in regions in South America where *Aedes aegypti*, the mosquito carrier, is unknown; that consequently there exists a "permanent reservoir of infection in the jungle"; and that human cases may be not essential but relatively unimportant in maintaining the jungle infection. Cities and towns in threatened regions must rely on control of the insect carrier. This method, however, is not applicable in the jungle infection, nor can the animal hosts of the jungle infection be eliminated. Vaccination with living virus to immunize exposed populations is the sole hope of prevention.

The brighter side of the story appears here, for the foundation's workers can report well over 40,000 vaccinations in South America during 1937, using a virus developed between 1934 and 1936 in the foundation's laboratory. Tests of the efficacy of the vaccination, made on some 700 individuals, showed full or partial immunity for over 99 per cent. "Efficient protection of populations exposed to jungle yellow fever is in sight," declares the review, and "the danger of the international spread of yellow fever through air traffic can be greatly reduced by immunization of air crews and passengers." Fortunately, the reaction to this virus is slight, rarely leading to more than a mild headache six or seven days after vaccination.

Even so, the foundation, through subsidizing construction of laboratory buildings in South American cities, admits frankly that many long problems remain for study before jungle yellow fever is to be mastered.

A New Profession

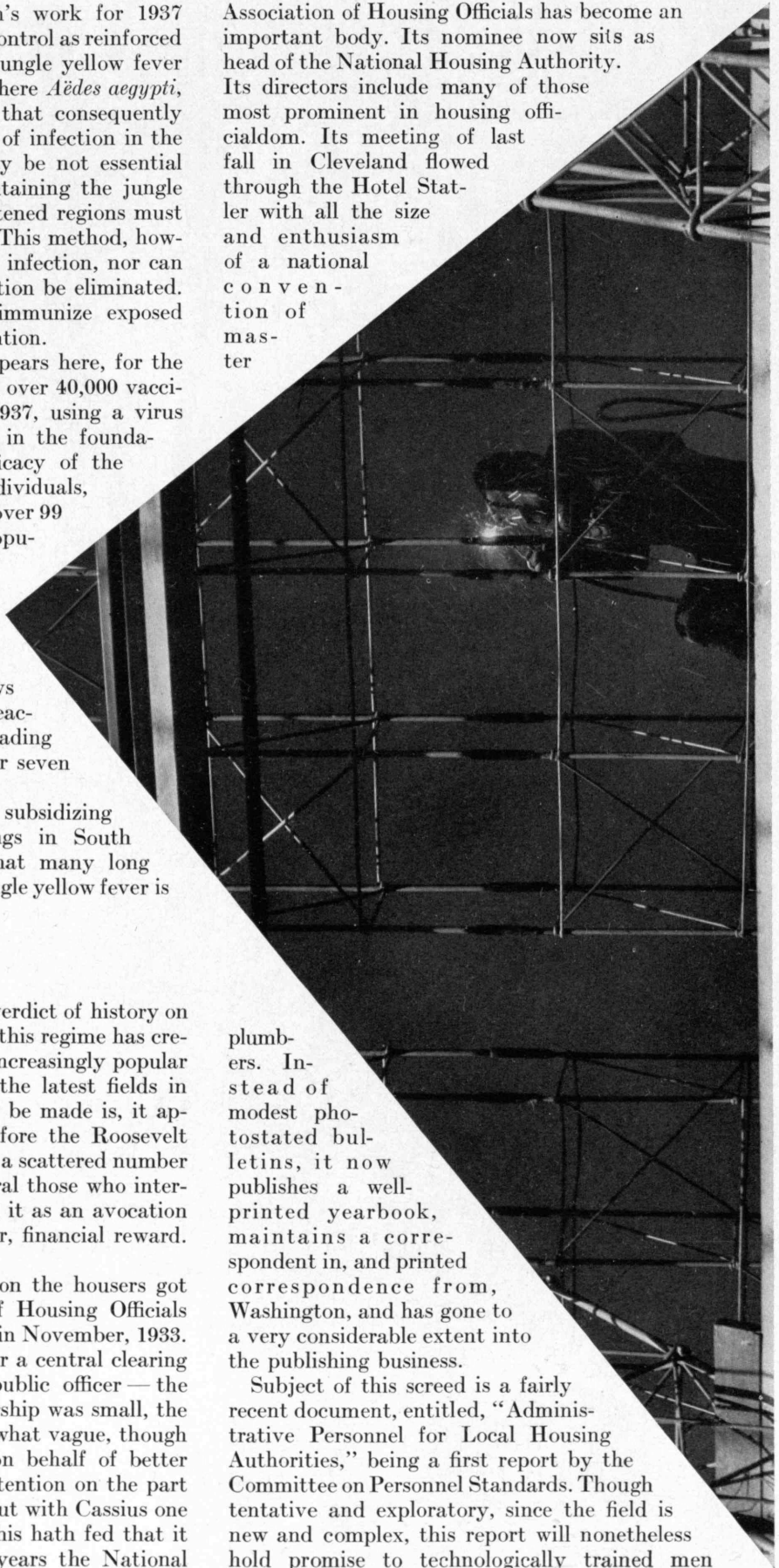
WHATEVER may be the final verdict of history on the New Deal, quite probably this regime has created new professions which will be increasingly popular with the passage of time. One of the latest fields in which a good living can reasonably be made is, it appears, in housing management. Before the Roosevelt administration there were, it is true, a scattered number of professional housers, but in general those who interested themselves in this subject did it as an avocation and with little hope of, or desire for, financial reward. How different the picture today!

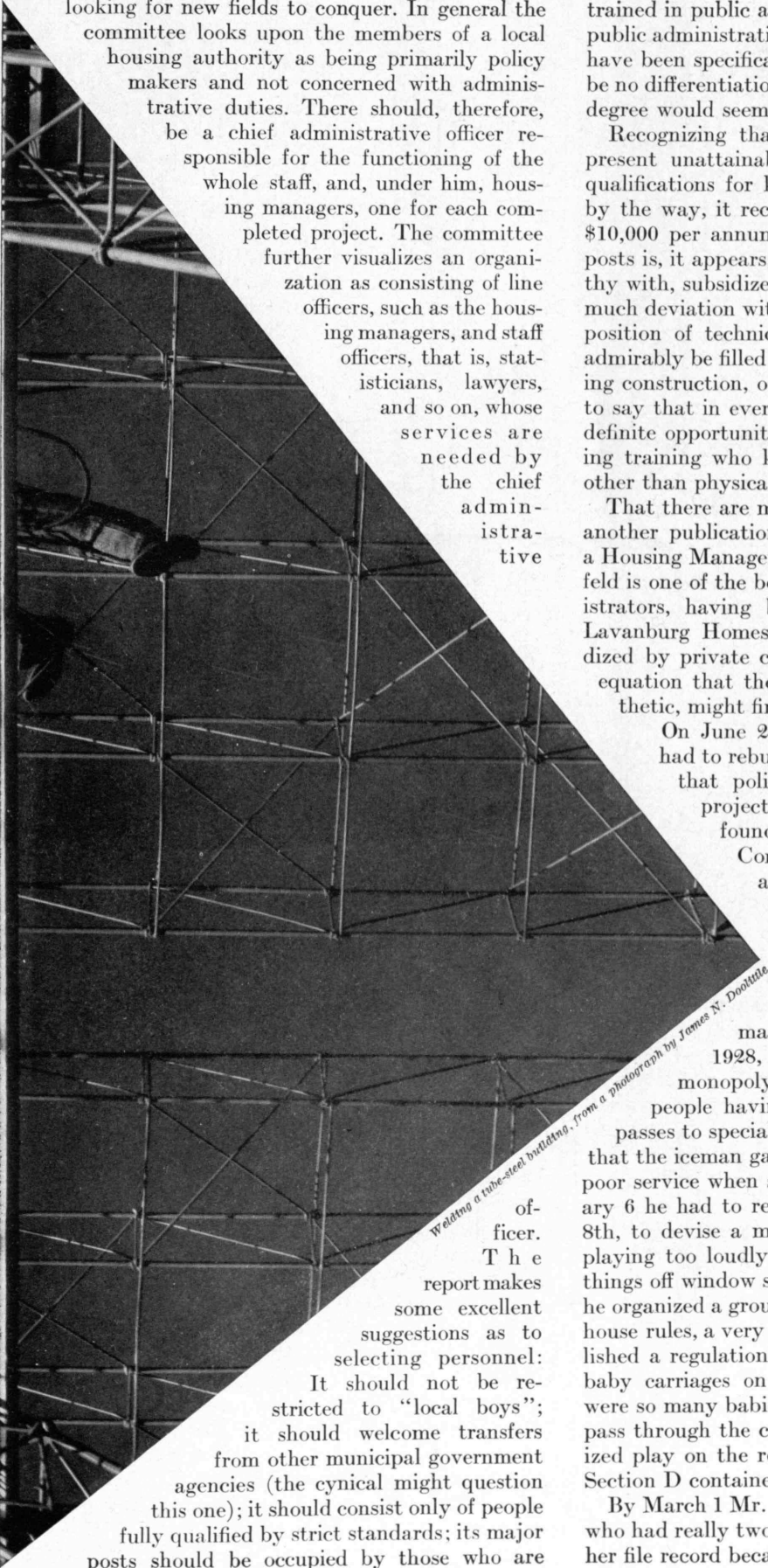
Almost with the 1933 inauguration the housers got busy. The National Association of Housing Officials was formed at a meeting in Chicago in November, 1933. The meeting recognized the need for a central clearing house for the then-new class of public officer—the housing official. At first the membership was small, the bulletins scanty, the purposes somewhat vague, though a definite pressure on legislators on behalf of better housing was evidently a realistic intention on the part of the leaders from the beginning. But with Cassius one might well wonder on what meat this hath fed that it doth wax so great. In five short years the National

Association of Housing Officials has become an important body. Its nominee now sits as head of the National Housing Authority. Its directors include many of those most prominent in housing officialdom. Its meeting of last fall in Cleveland flowed through the Hotel Statler with all the size and enthusiasm of a national convention of master

plumbers. Instead of modest photostated bulletins, it now publishes a well-printed yearbook, maintains a correspondent in, and printed correspondence from, Washington, and has gone to a very considerable extent into the publishing business.

Subject of this screed is a fairly recent document, entitled, "Administrative Personnel for Local Housing Authorities," being a first report by the Committee on Personnel Standards. Though tentative and exploratory, since the field is new and complex, this report will nonetheless hold promise to technologically trained men





looking for new fields to conquer. In general the committee looks upon the members of a local housing authority as being primarily policy makers and not concerned with administrative duties. There should, therefore, be a chief administrative officer responsible for the functioning of the whole staff, and, under him, housing managers, one for each completed project. The committee further visualizes an organization as consisting of line officers, such as the housing managers, and staff officers, that is, statisticians, lawyers, and so on, whose services are needed by the chief administrative

trained in public administration and who wish to enter public administration as a career; its staff officers should have been specifically trained in the field; there should be no differentiation between men and women; a college degree would seem desirable.

Recognizing that many of these desiderata are at present unattainable, the committee goes on to list qualifications for key positions — positions for which, by the way, it recommends salaries of from \$7,000 to \$10,000 per annum. The common requirement for all posts is, it appears, a full understanding of, and sympathy with, subsidized housing. Beyond this point there is much deviation with the job. Specifically, of course, the position of technical director is one which can most admirably be filled by a graduate in architecture, building construction, or civil engineering. But it is also fair to say that in every position discussed there should be definite opportunity for men with scientific or engineering training who know how to apply this training to other than physical factors.

That there are many such factors is well revealed by another publication of the N.A.H.O., "The Diary of a Housing Manager," by Abraham Goldfeld. Mr. Goldfeld is one of the best known of housing-project administrators, having been for many years head of the Lavanburg Homes, a highly successful project subsidized by private capital. His diary shows the kind of equation that the technological mind, if not sympathetic, might find difficulty in solving.

On June 25, 1927, for example, Mr. Goldfeld had to rebuke an applicant because she thought that political pull would get her into the project as a tenant; on July 2, a hot day, he found that whole families had left for Coney Island; on August 23 he planned a rejection card which would carefully skirt the real reasons for rejection — feeling, for some unexplained reason, that you could not tell a man he was rejected because his wife kept a filthy home or because he made too much money. On January 22, 1928, he undertook his first experiment in monopoly, when — to limit the number of people having access to the building — he gave passes to specially privileged tradesmen, only to find that the iceman gave short weight and the laundryman poor service when secure in their privileges. On February 6 he had to refuse a congressman a favor; on the 8th, to devise a method of keeping the children from playing too loudly too late at night, and also to keep things off window sills and fire escapes. On February 16 he organized a group of older boys to help him maintain house rules, a very successful venture; on the 23d, published a regulation that mothers could not keep their baby carriages on courts or sidewalks because there were so many babies that in fine weather one could not pass through the courts; on the 26th he started organized play on the roof; on the 27th, found the walls in Section D contained many hallmarks.

By March 1 Mr. Goldfeld discovered that Mrs. Gold, who had really two pairs of twins, had put down one on her file record because she was embarrassed. On March

of-
ficer.

The
report makes
some excellent
suggestions as to
selecting personnel:

It should not be restricted to "local boys"; it should welcome transfers from other municipal government agencies (the cynical might question this one); it should consist only of people fully qualified by strict standards; its major posts should be occupied by those who are

Welding a tube-steel building, from a photograph by James N. Doolittle



Spiral stair and water tank from down under

Henry Flannery

9, the baby-carriage problem still being pressing, he arranged a sale of collapsible carts at reduced cost and this solved the problem; on the 25th, received Shalachmonus (gift of goodies) because of the Purim holidays. On April 2 he was constrained to report that a flowerpot, dropping off a prohibited window ledge, missed little Frieda Kirchbaum by barely an inch, whereupon Mrs. Kirchbaum had immediately paid a call on the pot dropper; on the 13th, contributed to a fund for the striking miners in Pennsylvania but admonished Mrs. Krentzman that she must carry a statement with her in making the collection through the building. On May 8 he had to smooth down Mrs. Goldman, who said that the neighbors above her were taking so many showers that the water came through and spoiled her bedrooms and she wanted so much bathing stopped; on the 10th, had to stop a fight between Mrs. Dubin and Mrs. Marcus, doing this sympathetically and sensibly. On June 24 he spent the day with engineering complexities of fuel buying and of boilers; on July 13 and 14, had a difficult situation to straighten out resulting from adolescence on the roof. On August 9 Mr. Goldfeld was held up in his office by three robbers.

It must be evident from these random excerpts from a very human, amusing, and interesting document — which, incidentally, far more than any biography, gives the picture of a man — that the job of housing manager is not one for the unsympathetic, the uneducated, or the weak. Technologically trained men who feel themselves to be none of these might well look into the matter further, because house managing is a profession which, in these times, seems more likely to wax than to wane.

Deepest

LESS than a year ago K.C.L. A-2 meant nothing to anyone but officials of the Continental Oil Company, which used these symbols to identify one of its new wells in the Kern County, California, oil fields. Today K.C.L. A-2 is famous as the deepest oil well in the world, for recently its drilling crew had plumbed the earth to a depth of more than 14,100 feet, an all-time record and 1,314 feet deeper than the McElroy well in Texas, the former record holder. Not only is K.C.L. A-2 the deepest, but it is probably the straightest well ever drilled, for at a depth of 11,500 feet the drill hole is only slightly more than 20 feet off vertical.

The fact that the world's deepest well had not tapped a large reservoir of oil at a depth of nearly two and three-quarter miles is secondary in

interest to the feat as an engineering accomplishment. In addition to much valuable geological data, the drilling of K.C.L. A-2 raised new technical problems of special interest to the designers of drilling machinery. Although no special equipment was required for the task, new types of casings may be required for greater depths.

The record well was drilled to 14,100 feet in a total elapsed time of 259 days, during which the rotating bits encountered heaving shales, sand, and rock, and a temperature of 255 degrees F. at the bottom. Oil and gas at high pressures were encountered in the shales and greatly added to the problem of drilling. From the surface to a depth of slightly more than 8,000 feet, the drill was cutting through formations of Pliocene age, and from that depth on the shales and sands of the Miocene period were encountered. Heavy casing followed the drill and in one instance the drilling crew ran 11,573 feet of seven-inch casing in the remarkable time of eight and a half hours. The weight of the drill pipe and traveling assembly in K.C.L. A-2 was 210,000 pounds, the drill pipe alone weighing 190,000 pounds when suspended in drilling mud of a weight of 69 pounds per cubic foot.

The New Attack on Everest

Has It Any Scientific Significance?

BY JOHN E. BURCHARD

AS these words are being written, a long chain of English sahibs, Sherpa and Bhutia porters is winding its way across Tibet, something more than two-thirds of the way from Darjeeling, where the march began, to Rongbuk, where it will end and where the serious business of reattacking the 29,141 feet of Mount Everest will begin. By the time these words are read, the travelers will, if all goes well, have set up at least the first three of the six or seven camps they will try to establish. These three camps — fairly substantial affairs of several tents — will be erected while the spring snows are still falling. They will be called "low camps," although Camp III will be on perpetual snow at an elevation of about 21,000 feet. From this camp the testing part of the Everest expedition will begin. Porters and climbers will establish progressively higher and progressively simpler camps until the final ones, beneath the northeast shoulder of the mountain, will be little more than wind-blown shelter tents and frost-bitten caches for food. Through the month of May and, with luck and a late monsoon, for a week or two in June, the effort will continue. During this period of relatively beneficent weather, one day in three may be good. When the monsoon, laden with rain for the tropic plains of India, finally reaches the Himalayan peaks, it will come in the form of blizzards which will shut off any further effort for the year. By mid-June this year's story will have been written.

Though named for Colonel Sir George Everest, surveyor general of India, who, as Lieutenant Everest of the Artillery, was one of the early surveyors carrying on triangulation work in the region, this mountain has become romantically associated with one man, Mallory, the mountaineer *sans reproche* who, after carrying on the preliminary reconnaissances, finally lost his life with Irvine in the mystery-shrouded disaster which ended the 1924 Expedition. Though the bearers of nearly all the great names of post-War British mountaineering have found their way to the mountain, though the exploits of Younghusband, Bruce, Longstaff, Ruttledge, Norton, Somervell, Smythe, and Odell have all been notable, still the mountain remains the mountain of Mallory. The 1934 Expedition found Mallory's ax under conditions which must, to the unprejudiced, weigh heavily against the probability that he gained the summit. Nonetheless, the belief that he did prevail is hard to cry down. It is an apocryphal legend, clung to with a fervor transcending logic. In this, as in many other respects, the quest for Everest takes on a religious aspect.

Everest is a purely British mountain. Though Nanda Devi, the highest mountain (25,600

feet) yet conquered by man, was climbed by a joint English-American expedition, though German and German-American parties have struggled vainly against Kangchenjunga and Nanga Parbat, Everest has been reserved by Englishmen for Englishmen on the theory that the psychological difficulties are so intense that it would be dangerous to add to them by the complications of mixed tongues, mixed traditions, mixed temperaments. Yet, though higher, Everest is probably no more difficult of achievement than Nanga Parbat or Kangchenjunga. The former offers far more difficult rockwork and has been the most vindictive in its toll on European life; the latter has the hardest and most vicious ice that man has yet encountered, is exposed to the bitterest avalanches, and enjoys scarcely any better weather than Everest — indeed it seems likely that it may be the last of the great peaks to fall. Again the religious parallel is evident, this time in the doctrine of "the select."

Actual attacks on Everest began in 1921. Up to that time no climber had been within 50 miles of the mountain. The south side fronts on Nepal, which for political reasons has kept itself closed to European expeditions. No European has seen the mountain from that side from below at close range, although the fliers of the *Houston-Westland* expedition did fly toward it across Nepal. Mallory, who led the first climbing reconnaissance in 1921, was forced, therefore, to approach the mountain from Rongbuk in the north by a route which has been followed in essentials by every subsequent expedition. This route brings the explorer face to face with the mountain, looking south from the foot of the East Rongbuk Glacier. The summit from a base camp at this point exposes a net elevation of 13,000 feet or of Mont Blanc scale. But the difficulties of spanning that elevation are vastly increased by cold, by weather, and by the psychological and physical effects of high altitude.

From the summit of the mountain there are three main ridges: one running northeast, one approximately south, and one a little to the north of west. The triangle between the northeastern and southern ridges includes the east face, which every climber concedes to be insurmountable. That between the northwest and southern ridges has not really been reconnoitered, although it is known that an inaccessible precipice cuts off the northwest ridge from the south face, and it is also known that the net climb via the south would be materially greater. In the third, or north, sector most of the exploration has taken place and every attempt at the summit. Here, too, the current act will be played.

IF EVEREST IS SCALED, THE WORLD IN A SENSE WILL HAVE LOST SOMETHING — A TINY OBJECTIVE, PERHAPS, BUT POSSIBLY AN IMPORTANT ONE FOR THE SPIRIT. BUT IT WILL HAVE GAINED, TOO . . .

Some distance out the northeast ridge from the summit at a perceptible shoulder, another sharp ridge forks and descends slightly west of north to a saddle, whence it bends still farther west and ascends to the North Peak. It is this North Col which has seemed to all the climbers to be the vulnerable point. Mallory's early reconnaissance was carried out from Rongbuk Glacier, the head of which lies west of the North Col, sheltered between the almost parallel northwest ridge and that leading to the North Peak. He soon found that the 3,000 feet from the glacier to the col was very difficult, if not impossible, to scale and switching his exploration found the East Rongbuk Glacier slanting off to the east from the North Col. It is on the north edge of this glacier that Camp III will, as in the past, be pitched.

The glacier itself, though enervating, has so far stopped no one, and an approximate site for Camp IV has been well up the east wall of the North Col. From this camp the climbers reach the face edge and set Camps V and VI just in the lee of the northeast shoulder. The site may vary slightly from expedition to expedition, with a tendency to set it higher each time. So far, all the assaults have been carried on from this point without benefit of further camps, and it is in the final 3,000 feet (or, in the case of the 1934 Expedition, the final 1,600 feet) of altitude between Camp VI and the summit that the story of Everest has really been written.

There have been, of course, exciting enough moments in other portions of the climb. In 1921, because of their explorations on the other side, Mallory and Bullock did not approach the North Col from the East Rongbuk Glacier until late September, after the monsoon had passed. Though the weather was fine, it was extremely cold, and this season has never been tried again. Mallory and Bullock easily mounted the 1,000 feet to the col in one day but were here forced back by the winds, and this terminated the 1921 Expedition, which had

demonstrated that there was a way to the saddle. No other party of climbers has found this part of the climb so simple, and indeed it took one party nine days to ascend the same 1,000 feet. In comparing these achievements it must be remembered that it is part of present technique on Everest to set all the camps, except the very highest, with porters, saving the climbers as much as possible for the final waves. The climbers must therefore often set ropes and cut unusually deep steps and even resort to rope ladders to make the passage possible for the heavily laden bearers.

The 1921 Expedition was largely exploratory. That which followed in 1922 was extremely strong. Led by General Bruce, it included, besides Mallory, Dr. Somervell, Dr. Longstaff, and Colonel Norton. The question of oxygen had now been raised, and midst divided opinion one party used it and one did not, with no demonstrated results either way. A nonoxygen party of Mallory and Morshead reached 27,000 feet, and the party of Finch with oxygen went slightly higher. This expedition of 1922 ended in disaster due to an avalanche on a simple slope which carried away several porters. Accidents in mountains quite usually occur when least expected. The reader will recall Whymper's similar experience after the conquest of the Matterhorn.

Mallory had always felt that the way to the summit would lie along the ridge from the northeast shoulder to the top. Two climbing obstacles lie in the way, walls of perhaps 100 feet each which have been called the First and Second Steps. The 1924 Expedition, led by Mallory, naturally chose the ridge route. Despite atrocious weather, which held the climbers up at every turn, Mallory and Irvine finally set out up the ridge. Disappearing in the clouds, they were never seen again. Odell, trying rescue, twice attained 27,000 feet solo and without oxygen on subsequent days, but was forced back by time on both occasions. Then came the monsoon.

(Continued on page 324)

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Mechanical Tests for Drivers

Are They of Value in Promoting Safety?

BY HARRY R. DESILVA

WHEN intelligence tests were first introduced, they had their detractors and their overardent zealots. Having lived with intelligence tests longer, we appreciate their value but do not expect them to do the impossible, such as predict an individual's success in afterlife. We do, however, find them useful in helping a skilled vocational expert to counsel the individual to avoid certain fields of activity where he will be unduly handicapped. Similarly, driver test apparatus in the hands of a skilled operator can render valuable service to drivers. But like instruments of the physician or surgeon they must be expertly used. Equally important, the results therefrom must be interpreted by an experienced person. Used in a professional fashion, driver test apparatus will yield additional information which to an expert with his unaided senses would remain forever hidden.^{7*}

Apparatus makes for more detailed, faster, and more comprehensive observation. Scientific instruments increase the objectivity of diagnosis and produce results which can be standardized. Last but not least they increase the confidence of the subject in the clinic supervisor. Driver apparatus gives a more accurate measure of some of the basic factors that go to make up driving skill, such as eye-hand coordination, speed of reaction, and visual efficiency. The eye-hand coordination of an individual can be determined by making him carry out certain prescribed operations. The steering test developed by the Harvard driver research laboratory is useful both in standardizing the set of operations required of the driver and in measuring his coordination more carefully than could be done by unaided human observation. In other words, the apparatus standardizes the conditions of performance, repeats them uniformly for each individual, and measures in objective units the subject's efficiency.

We have available apparatus which measures activity too fast for the human eye to evaluate.⁴ The average person takes only about 0.4 second to see a signal and move his foot from accelerator to brake. The machine we have to measure braking

MEASURING BASIC FACTORS IN DRIVING SKILL—HUMAN- IZING APPARATUS—DRIVER CLINICS—PRESCRIBING FOR THE INFERIOR DRIVER

reaction time is accurate to within .01 second. Quickness of reaction is a fundamental part of all skilled performances of humans. Such a measure of fractional seconds is possible by a scientific instrument but not by direct observation. Normal eyes

recover from glare in a matter of a few seconds. Without apparatus we could not reproduce uniform conditions and measure the recovery time.

More comprehensive observation is possible with mechanical tests. Automobile driving continually calls for the ability to do several things at once or in quick succession. Our vigilance test equipment enables us to present a succession of different tasks, offer the subject a variety of different ways of responding, and then obtain a measure of his skill. No person without the assistance of apparatus, regardless of how experienced and expert in driving he might be, could possibly observe and estimate accurately and uniformly the ability of a driver to apprehend and carry on several things at once.

The most objectionable feature of the road examination for drivers is the presence of the examiner. He makes people nervous. He is human and therefore subject to personal likes and dislikes. Having limited powers of observation, he makes his judgment not on the basis of measurement but on opinion. In contrast, apparatus is objective. An instrument gives measurements, not opinions. It is consistent and treats everyone the same.

It is impersonal and therefore elicits a constant attitude rather than variable personal attitudes on the part of the subject.

Just as we have standards of performance in golf, tennis, and bowling, so do we need standards of performance in automobile driving. But we cannot measure driving in terms of speed or accuracy or even by comparing ourselves with experts, since we have standards of excellence. Our driver apparatus, however, measures basic factors in automobile skill and furnishes us with standards. To be sure, the most skillful driver is not always the safest driver. But the least skillful, ignorant driver is nearly always an unsafe driver. Moreover, the average person is practically always low on some sensory or motor capacity. Unquestionably



FIG. 1 TESTING VIGILANCE

By presenting a succession of different tasks and providing the driver with a variety of different ways of responding, this equipment provides a measure of driving skill

*Numbers refer to notes at end of article.



FIG. 2 TESTING VISION

Many supposedly normal adults have visual defects of which they are ignorant. This equipment, together with that shown on the preceding page, covers the 12 tests listed on the profiles shown on the opposite page

he should be taught to recognize that weakness and to try to overcome it or compensate for it. In the process he may be led to recognize the need for sportsmanship in driving and thereby improve his attitude as well as his skill.

Knowledge of their own relative efficiency of performance is particularly needed by inexperienced young drivers, by elderly drivers, and by defective middle-aged drivers. Youngsters have not driven enough to learn to be cautious. Neither pecuniary loss nor injury from accidents has had a sobering influence. Youngsters should be shown their poorer coordination (young people do less well on the steering and vigilance tests than adults) and their numerous visual defects. They should be brought to realize that all cannot drive equally well and that study and concentrated effort are just as necessary to skill in driving as to excellence in sports.³

We have discovered that most elderly persons are ignorant of their failing abilities. Results on all apparatus show decline of ability from 35 years onward. It is surprising how many supposedly normal adults have visual defects of which they are ignorant. For example, a Californian study showed that 20 per cent of fatal-accident operators had suppressed vision on one side, and that nearly every collision occurred on the side of the inferior eye. Adults, with their greater wisdom, accept objective facts about their ability as readily as youngsters. For this reason driver test apparatus with determined standards of performance for different age groups is particularly effective in convincing older persons to slow down, drive less at night, and in general exercise more care to compensate for decreased skill.

We are all primarily interested in ourselves. Driver test equipment informs us about ourselves, not in general terms but specifically by comparison of our performance with that of the average person. Few drivers are perfect. Ordinary drivers usually accept the challenge

to improve after learning about their weak points. For example, practice on the steering test brings about an improved performance. Similarly, steering a car around corners, taking curves, and backing into a parking place can be improved with practice. Braking reaction time, on the other hand, cannot be changed. But vigilance, or alert and accurate responses to changing conditions, can be improved with experience and by taking seriously the task of driving a car. If, after practice, drivers find themselves still unable to improve, they can compensate by driving more slowly or by avoiding heavy traffic or other hazards. Driver clinics are, therefore, valuable for normal adults as well as for young and old persons.⁵

Just as a man is judged by the clothes he wears, and the workman by his tools, so the driver clinic supervisor is judged by the professional appearance of his apparatus. There is a prestige value to apparatus. Psychologists have for years been using various gadgets for measuring reaction time, coordination, and various sensory capacities. The more scientific the appearance of the apparatus, the greater the impression on the subject; haywire devices have never emerged from the laboratory because of their appearance. Driver apparatus, last but not least, adds a professional halo to the clinic supervisor, just as the bag of instruments adds immeasurably to the front of the physician.

All too often apparatus for testing humans is designed and constructed by a mechanic who has never and will never use it on the general public. Our experience of over four years in devising and putting driver test apparatus into practical use has impressed us with the need for coordinating the design, construction, and use of the human testing equipment. No human testing instrument can be designed on the drawing board and be expected to work out successfully in practice. Few engineers have ever really set out to build apparatus around the human being, nor do manufacturers appreciate the wisdom of adapting apparatus to the public before putting it on the market. Most apparatus is designed solely to meet certain economic or engineering specifications. It is high time design engineers started to study John Q. Public instead of leaving him to the tender mercies of the sales staff.

Human beings, unlike inert matter, cannot be slapped into a machine, subjected to various tests, and ejected: The subject must first be given instructions and be interested in taking the test; he must be told what to do and how to do it; and he must be sent away feeling that he has been helped. Each subject is unique. He approaches the test with different attitudes and adopts different methods of carrying out his task. The supervisor is all important in adjusting the subject to the apparatus.⁹ The instruments themselves, however, are not unimportant. The equipment should interest the driver. If it strikes him as unreasonable or calls for performance too remote from the activity it supposedly tests, he often fails to put forth his best efforts.

To duplicate road conditions in the laboratory in order to please the subject is obviously impossible and unnecessary. But we can simulate some driver conditions, such as the car lights and pedestrians in our glare test, or the road scene in our steering test. A couple of years ago we constructed a motion picture driving test to measure steering coordination. While it simulated road conditions more perfectly and proved more interesting to drivers, it did no better job of distinguishing between the good and poor drivers than our very much simpler steering test. This finding, together with the high cost and the great bulk of the moving picture test, made us give up this method as impracticable.

Americans are said to have the most highly developed sense of competition of any national group. One way in which this manifests itself is their inveterate tendency to try to "beat" the test. To counteract this we have adjusted our tests to make cheating impossible. For example, on our braking reaction test the interval between the time of applying the foot to the accelerator and the appearance of the signal light is made irregular by a control device. In addition, if a person lifts his foot before the signal appears, the test will not operate. These two features assure accurate scores, as they make it impossible for anyone to beat the test. Similarly, on the glare and other visual tests, we require the subject to tell us not only that he sees but what he sees.

A test should be difficult enough to challenge the ability of the most skillful operator. The least skillful operator must also be able to make a creditable performance. Otherwise he will resent the test and it will affect his attitude toward subsequent tests, nullifying the educational value of the clinic as a whole. For example, our steering test is adjusted so that within a total range of 100, the best person can make the 90's; the average person, the 60's; and the poor person, the 30's.

Experience has shown that on most tests the majority of individuals, comprising sometimes 80 per cent of the total, do not vary greatly in their scores. A good test should not give the majority of average persons the same score. Ordinary persons like to see some differences in scores among themselves. For example, we have found that braking reaction scores must be measured not in 1/8 seconds but 1/100 seconds, to differentiate between average persons. The accuracy of apparatus must be at least great enough to satisfy John Q. Public's curiosity in comparing himself with his fellow men.

Apparatus should be built for the subject. The task should be capable of being sized up quickly and the control devices, simple and natural to use. On this account we use a regular seat, steering wheel, and control pedals on our vigilance test. In our glare test the subject is told where to look for the pedestrian. Otherwise chance will influence the score on the glare recovery. Similarly, we give 20-second practice periods before starting on the vigilance test to show the subject how the test operates. Drivers cannot be vigilant on the test or on the highway unless they know what to expect and have an automatic reaction pattern to utilize in an emergency. By practice, persons can improve their ability on the vigilance test, just as they can improve their ability to be alert and to respond skillfully at all times at the wheel of a car.

Last but not least the apparatus should be adapted to the operator. The dials should be easy to read and the switches accessible. Having to spend a minimum of time managing the apparatus, the operator is left an opportunity to observe attitudes and unusual behavior of the subject. Personality traits and attitudes never obtainable in an interview are often revealed in the process of taking the vigilance test. Recording devices frequently reveal additional information not shown on indicating instruments. On the other hand, recording (*Continued on page 326*)

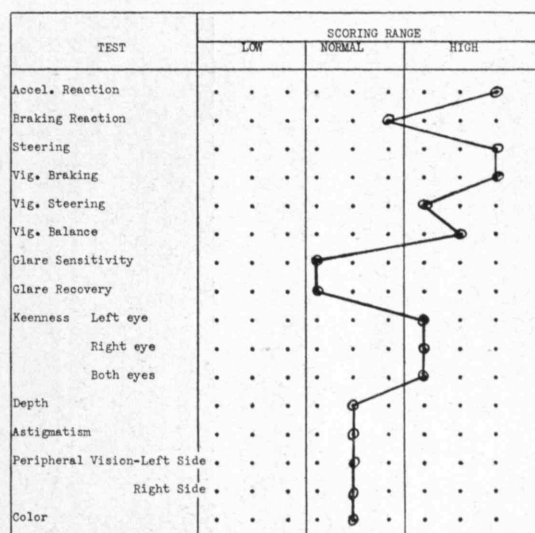


FIG. 3 SUPERIOR DRIVER

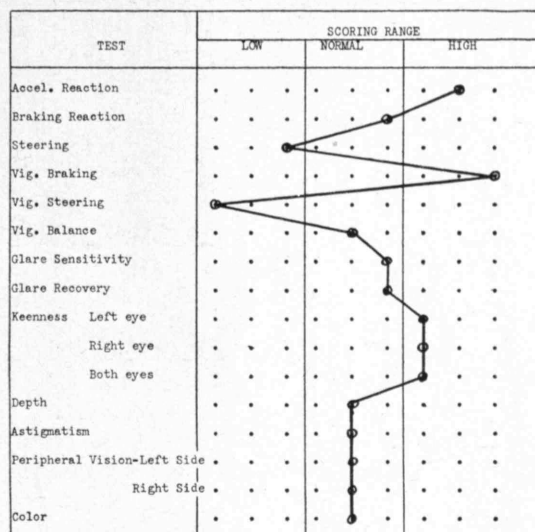


FIG. 4 AVERAGE DRIVER

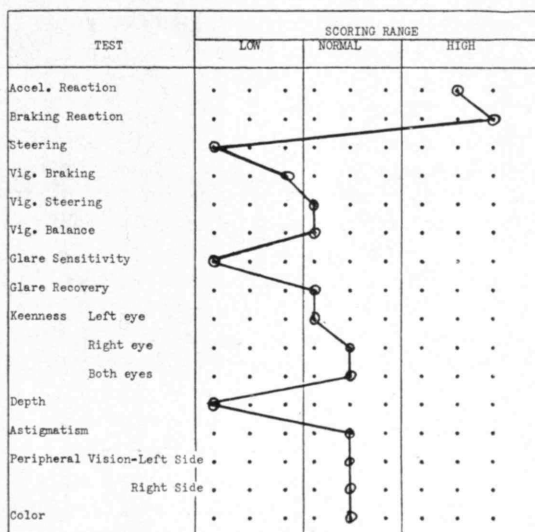


FIG. 5 UNSKILLFUL DRIVER

The composite ratings in the three profile graphs above consolidate the results of all tests on each individual, provide a diagnosis of the subject's strengths and weaknesses



Benjamin Franklin experimenting with electricity, a sketch for a larger picture never painted, by the famous 18th Century American painter, Benjamin West, the bicentenary of whose birth was recently celebrated

Philadelphia Museum of Art

Science and Culture

Does the Dignity of Life Become Greater As We Learn More of Its Complexity?

BY FREDERICK G. FASSETT, JR.

A FEW months ago, as everyone knows, one of the Mussolini boys was wrought to poetry by the sensation of pure beauty which he experienced at releasing a bomb from his airplane and watching it blow up a group of African horsemen in an explosion that resembled the unfolding of a rose. Himself the product, as far as eminent position in world affairs is concerned, of the industrialism of the 19th Century, the young Vittorio employed, in his poetic interlude, machines embodying the coöperative contributions of scientists and engineers from all parts of the civilized world and employed them to bring civilization to hitherto benighted regions.

A few months hence, goggle-eyed Eskimos beyond the arctic circle may pause for a moment from more material concerns to look with uncomprehending curiosity at another "bomb," a spherical shell filled with a half ton or so of lead, in the heart of which is buried a container filled with argon. The inert gas in turn will inclose a delicate device that at intervals will register the receipt of an unseen, unknown, uncontrolled impulse delivered by the penetration of a cosmic ray.

These two random examples illustrate the range — in geography and import — of scientific undertaking in the world. The first of them, though graphic, is easily misinterpreted if it is regarded alone, without its compensatory corollaries. Inoculation against fever, for instance, may follow the bombing plane. That the bombing plane is the most vividly ubiquitous example of applied science in the world at present, is the fault not of science as such but of nonscientific applications of it. The cosmic ray bomb, which just sits there silently working, is a less spectacular but probably even more important example of scientific undertaking, this time of abstract science, which takes as its province not merely a world but a universe.

Implicit also in these bombs are reasons why it is not presumptuous for me to use in 1938 a title employed in 1880 by so powerful a mind as Thomas Huxley. Although the fundamental comparison expressed in it remains the same, the first term has undergone such great alteration that the two taken together now involve reasoning and material far different from those of a half century ago. The difference is enough to insure

the modern questioner against imputations of rashness or impertinence. If we take "culture" to mean the general philosophic aspect of our civilization, we find it pervaded by science to an extent imagined by a few, but scoffed at by the many, in Huxley's day. Whilst he was perforce seeking to show that the two are not mutually repellent, we can afford to ignore that question as settled and to be concerned with the results of the interpenetration.

WE are inclined to look on definitions as fixed and final, and to believe that once we have tagged a thing or an idea with a phrase describing and limiting it, the thing or idea must *ipso facto* remain what we have decided to call it. This sort of delusion is in a large measure a good and desirable thing; except for it, we should have a rather hard time understanding our world. But it can easily be carried to a dangerous extreme and result in trouble. Because of the facility with which we can — in our own estimation — pin an idea down with a label, or approximate an idea with a definition, we are led to treat not only the label but the idea, also, as a definite, measured, fixed, final entity, to be juggled as we will but not to be essentially altered without our permission. The words, we think, mean one thing, and what they mean is the thing defined, and the thing defined is one thing.

But the words, as such, mean nothing; they are merely crystallizations from a solution, and when the solution is culture, they are very unstable crystallizations. Such terms as "the western culture," "modern culture," and "the culture of European and American nations" mean nothing in themselves; they are philosophical approximations which we set up for convenience in apprehending the milling, unstable, constantly shifting complex of social forces constituting civilized life as we live it. Unless conveniently collected in some such inclusive term, the quicksilver would elude us. Since at any one moment civilization, or civilized life, by the introduction of some new element or the extinction of some old element, is being altered from its state of the immediately preceding moment, these definitive terms — as we fondly regard them — are constantly undergoing a revision of meaning. Though the pattern of vowels and consonants remains the same in the definition, the latter represents (or embodies, if you prefer) a fluid meaning which changes continuously.

These revisions of meaning, of both major and minor consequence, occur after and through the readjustments which take place when the complex or idea defined is altered to accommodate the accession or the loss of a component. This process occupies three rather clearly marked stages, which are curiously analogous to the phases of an infant's perception of external objects. The three stages are plainly illustrated in the gradual incorporation of functional modernism into architecture. They may be labeled — and with all our previous caveats in mind — as recognition, appropriation, and assimilation. The first occurs not when the elements of the new force are devised or assembled but when, possibly after a considerable period of unperceived or unsensed operation, the force is recognized as such, often through the proselytizing efforts of some of its

practitioners who have become annoyed at the inertia of the general mass. Functional modernism in architecture — or the applications of what was to be called functional modernism — had been in existence and in effect for some years before, in the early 1900's, Frank Lloyd Wright led in forcing its recognition. We are now, presumably, emerging from the second phase, that of the appropriation of functional modernism, a period of uncontrolled adoption with insufficient critical restraint, consequently a period of ungoverned applications and intolerant impositions upon other elements making up architecture as a whole. It is probably fortunate that many of the monuments of appropriation are built of wire and plaster rather than steel and concrete. Now beginning, if you are optimistic, is the period of assimilation, during which — as a result of critical control, self-applied — adjustment and compromise are made, and the abuses of appropriation are corrected. Though functional modernism after this third phase may never exercise supreme sway, no completely self-conscious architect after this period can escape being to some degree a functionalist. The meaning of architecture thus will have been revised in response to the accommodation of a new force into the complex which it embodies.

This particular accommodation — of major importance for architecture and hence producing a major revision of meaning in that definition — is a fair example of minor accommodation and revision in culture as a whole and of the stages of a process constantly occurring for one or another of the forces making up that whole. The absorption of functional modernism into architecture may be expected to produce differences in the product of architecture, much as the absorption of science into culture will produce differences in men. For it is through their expressions — on the one hand, buildings; on the other, individualities — that such abstractions as "architecture" and "culture" have their effects on us.

When we are concerned over culture, then, though the argument may be made in most cosmic terms, fundamentally we are alarmed, or anxious, or skeptical over probable consequences in culture as it comes home to us, that is, consequences in the culture of individuals, other men, and ourselves. Whatever may have happened to anthropomorphism in matters divine, theological, or supernatural, at least the anthropocentric purpose still is dominant in institutions and conceptions of human origin. With certain manifestations of disposition, certain ways of behavior, which we attribute to the operation of culture as we define it, are we concerned. The definition, even when reduced in purview or intention to the single individual, remains an abstraction and, as such, is not immediately tangible. Manifestations of those qualities in which the abstraction is expressed are tangible, however; our alarm, anxiety, enthusiasm, or skepticism arises over expected alterations in these, for by such alterations the course of our own lives may be affected.

The assimilation of functionalism, we have said, means that no fully self-conscious architect can henceforth escape being to some degree a functionalist, and that, therefore, his effect on other men must be a differ-

ent thing because of that assimilation. So it will be with the final assimilation of science into culture; the influence of the cultured man upon others will be a different thing because of it. As abstract architecture remains an abstraction, of immediacy only in its concrete manifestations in terms of building and, hence, principally in terms of its operation through the mind, philosophy, or approach of the practitioner, so culture as a general term is an abstraction, important to individuals only through the results attained by its practitioners.

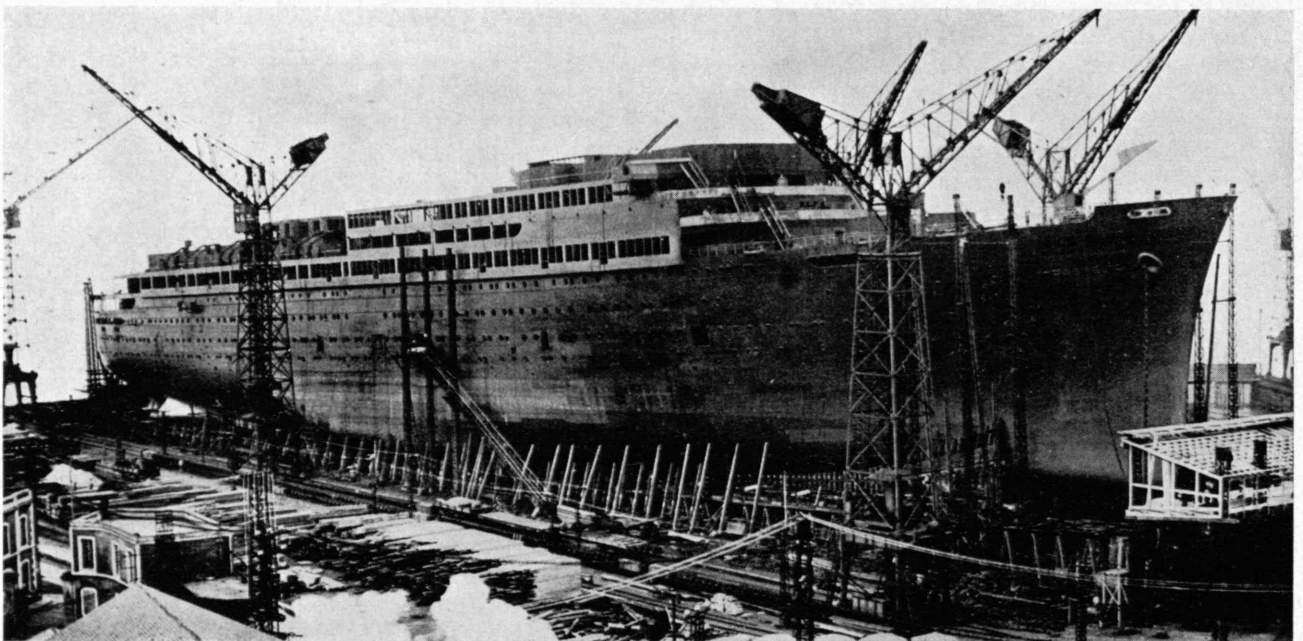
Phrases used to summarize what we understand as a cultured individual suffer the same disabilities as the general terms we have talked about. They are approximations, endeavoring to hold together a number of variables and a few constants expressed through the variables. Culture, as regards the individual, we are told, means a heightened awareness of meaning, of significance, and of beauty. Meaning, significance, beauty are the variables in this formula; awareness is an inclusive constant, covering three underlying concepts. These are cultivation, appreciation, sympathy.

Even the most thoroughgoing disciple of Rousseau finds in culture thus defined a quality essentially artificial in that it is something beyond spontaneous, intuitive perception of beauty and meaning. The fact that it is an intensifying of natural potentialities implies the first of our three constants. The etymology of the word is truthful. By cultivation, deliberate or accidental, are fostered higher sensibilities; by cultivation man raises his appreciative capacity from the level where a sunset is the acme of beauty and an arithmetic progression is the limit of perceived meaning. By the same process he develops poise and equanimity beyond the stage of "native dignity." Now cultivation implies a means. It is not enough to shadowbox with the soul in a vacuum. To the middle of the last century, the means

had been a primarily humane and anthropocentric set of studies, man-focused even to the extent of an anthropomorphic religion. Given original humane predisposition — which is hardly an impossible assumption — it was and is inevitable that cultivation employing such a means should intensify the quality of sympathy enough to make it the third of our constants. Human hopes, fears, sorrows, joys, expressed in all the media which human ingenuity had been able to adapt to use and remaining fundamentally the same from age to age — it was upon these that the individuality was tried in the course of cultivation. The clear consequence was a heightened sympathy. This we may define as including greater social consciousness, greater responsiveness to other than self-interest, and, hence, as the intellectualization of natural tolerance and good will.

The antagonism called forth by the recognition of science as a major force in our culture, the phase of its absorption which took place during the past century, resulted from two factors. First and less honorable is the resentment of interests vested in a definition of culture crystallized for centuries, and of institutions based on that definition. The task of science has not been made any easier by the well-intentioned but misguided among its supporters who attacked these institutions as anachronistic and futile. They might better have saved their power for the real task. The second array against science is less definite and approachable. Often inarticulate and at best so emotionally stated as to be incoherent, this is the belief that the rise of science will redefine individual culture so that sympathy will be of greatly reduced value, if indeed it is included at all.

THE scientific discipline in the modern sense is younger than Shakespeare, younger by a half century than the colony of (Continued on page 328)



THE NEW LINER PASTEUR

Wide World

One of the few ships that bear the names of scientists — the 30,000-ton liner built for the France-Argentina service, ready for a sidewise launching at St. Nazaire. She was christened by Mme. Pasteur Vallery-Radot, whose husband is a grandson of Pasteur.

Apprenticed Sunlight

The Role of the Physicist in Creating Wealth Through a Better Understanding of Nature

BY GEORGE R. HARRISON

THE SOURCE OF EARTH'S ENERGY . . . HOW THE ATOM SPLITTERS OF YESTERDAY PROVIDED THE SALT WHICH FLAVORS LIFE TODAY . . . THE SHORTSIGHTEDNESS OF PRACTICALITY . . . REPLACING NATURAL RESOURCES BY INTELLIGENT RESOURCEFULNESS

THE energy which keeps the wheels of civilization turning has all come to us from the sun, whether we draw it from a gasoline tank, a storage battery, a ton of coal, or a pound of butter. So long as the sun keeps shining, we appear to have little cause to worry about running out of energy, and the best evidence indicates that our powerhouse in the heavens will still be glowing brilliantly a billion years from now. Unfortunately, however, most of the energy we are now using came from the sun in ages past, and we are drawing heavily on the earth's savings account of coal and oil instead of using our current energy income. Even though the sun sends us 20,000 times as much power as we need, most of it slips through our fingers, merely because we have not yet learned how to convert sunlight efficiently into those forms of energy which are useful for civilized living.

Whether yesterday was sunny or cloudy, a June day or a day in December, enough energy fell on earth during that 24 hours to serve humanity for a century — enough to keep the world's furnaces roasting and its refrigerators icy, to spin its wheels and refine its ores, and to fill for a hundred years every other need for power. Select on a map any convenient desert and look at an area 10 miles wide and 20 miles long — an area which would about cover the sprawling environs of a big city. Year after year enough sunlight is lavished on this small, sandy waste to satisfy perpetually the power needs of the entire population of the United States at the present rate of power consumption. In fact, to obtain energy equivalent to that swallowed in one hour on a sunny day by any single square mile of land or sea, grimy miners must now dig 500 tons of coal from the gloomy depths of the earth.

Energy is free — to him who can find how to capture and use it. But energy is wealth and, in the case of apprenticed sunlight, wealth of a particularly desirable kind, for it is freshly created and does not involve robbing the poor, taxing the rich, or despoiling the earth of materials which may be needed by our descendants as much as by ourselves.

The scientist who is most concerned with the investigation and control of energy is the physicist. In his researches on energy this scientist works very closely

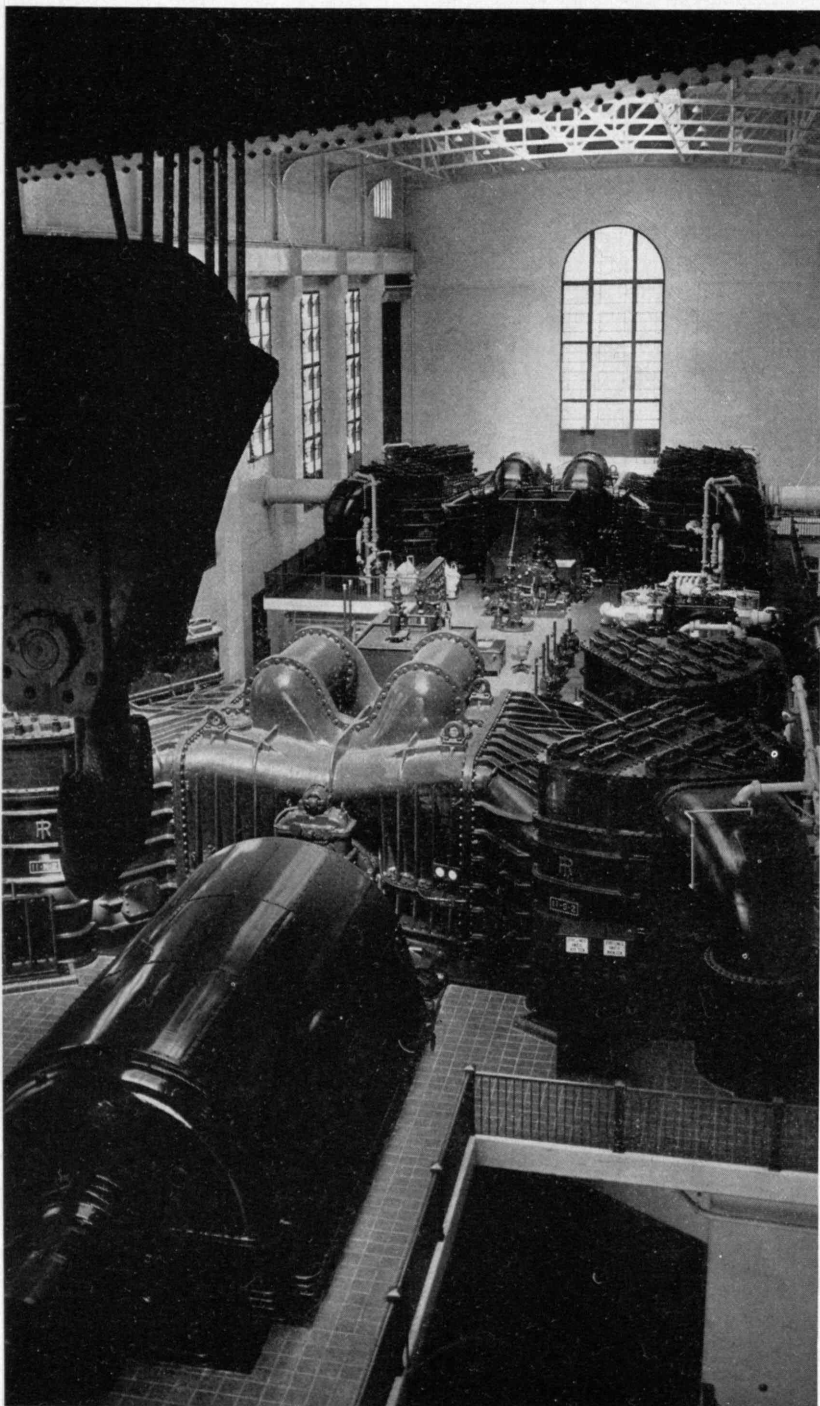
with the chemist, who is interested primarily in matter. Matter and energy are always closely related, and physics and chemistry — originally a single science called natural philosophy — can never be separated completely, for they are the twin sciences which deal with the fundamental structure of our physical universe.

The chemist gathers the minerals and fibers and oils which he finds in nature, reduces them to the elementary atoms of which they are composed, and then causes these atoms to recombine into thousands of new kinds of molecules which form new perfumes and dyes, new flavors and fabrics and drugs.

The physicist takes apart the very atoms themselves, sending through wires the electrons which he thus collects, operating with them his telephones and x-ray tubes and television outfits. Or he may induce the atoms to emit light rays of strange new colors. These rays he bends with lenses cleverly designed to enable him to discern objects which are too dark or small or transparent otherwise to be seen.

As the physicist has gradually learned to control the grosser forms of energy, such as heat and sound, he has been led to probe deeper and deeper into nature to study the behavior of energy in its finer and more subtle forms, such as light and electricity and magnetism. He has now succeeded in penetrating through the atom into its tiny nucleus or core, and one of his principal interests at the moment (though by no means the only one nor necessarily the most important one) is to take sample atom cores apart to see what they are made of and how they are put together. The atom is being taken to pieces quite literally, for when one of the modern atom-smashing devices is put into operation, the atomic debris comes flying out like dirt from a squirrel hole in which a very industrious puppy is scratching.

This rapid development of one of the more spectacular phases of physics has led to the opinion, sometimes expressed by critics, that physicists are a little group of willful men who insist upon smashing atoms and doing other such useless tricks, when they might much better be giving their attention to matters which would be of greater practical value to the world. From the standpoint of the sociologist, says one popular scientific writer, the atom splitters have not done much to earn their salt. To those who survey the facts, however, it should be apparent that it is to the atom splitters of yesterday that we owe much of the salt which flavors life today, and that the atom splitters of today (using the term broadly to cover fundamental research into the structure of matter and energy) are now earning much of the salt of the next generation. After all, it is hardly reasonable to



Steam Plant — from a photograph by James N. Doolittle

THE WHEELS OF CIVILIZATION

... are kept turning by the energy which comes to us from the sun, whether we draw it from a gasoline tank, a storage battery, a ton of coal, or a pound of butter

accuse all physicists of being impractical if as soon as any worker in physical science does anything practical he is called an engineer and no physicist!

This reputation of the physicist for impracticality is enhanced by the interval of a generation or two which usually elapses between the discovery of a new physical phenomenon or the verification of a new theory and its utilization for practical ends. The great developments of radio, talking motion pictures, the long-distance tele-

phone, and dozens of other advances which now add pleasure to the lives of millions are possible only because of discoveries made by academic physicists in the period 1885 to 1900, discoveries which have been applied by industrial physicists in the intervening years.

The scientist who appears preoccupied with the center of the atom is burrowing after the key to the structure of matter and energy, not because he expects to tap the energy in the atom but because he knows that before nature can be controlled she must be understood. The physicist who is engaged in pure or fundamental research is attempting to understand nature. The applied physicist is attempting to control nature. The two kinds of investigators must keep in close collaboration, for physics is a vast science which ranges from the very theoretical (like relativity) to the intensely practical (like telephony), and its workers have ranged from Einstein to Edison.

The casual newspaper reader usually takes a tolerant attitude toward the "impractical goings on" of the academic physicist. Discoveries made inside the cores of atoms — smallest known particles in the universe — have a certain elemental grandeur, and it is, the layman feels, a sign of cultural affluence that a practical world can afford them, just as in the past the world has been able and willing to support a reasonable number of poets. But occasionally a hard-souled skeptic boils over and writes his newspaper a protest against spending money on such foolish games. Why, asks he, should we support experts on relativity who want to calculate the properties of warped space-time, while so many slums and tenements are producing warped lives in the space that we have?

The simple practical truth is that experience has shown no better way of permanently abolishing slums than by well-directed atom smashing. Poverty can best be abolished by replacing it with wealth, and the systematic investigation of matter and energy without regard to immediate practical ends has turned out, strangely enough, to be the most royal road to social riches. In the long run, digging for truth has always proved not only more interesting but more profitable than digging for gold. If urged on by the love for digging, one digs deeper than if searching for some particular nugget, and much gold is usually produced eventually as a by-product. Practicality is inevitably shortsighted and is self-handicapped by the fact that it is looking so hard for some one objective that it may miss much that nature presents to one who is purposefully digging for whatever may turn up.

Wealth consists ultimately of the control of matter and energy. The wealth level of mankind is slowly rising as science learns to capture a constantly growing fraction of the available energy and turn it more effectively to useful ends. Every human being can be made at least 20,000 times as wealthy as he is today, but only fundamental investigations, such as atom smashing, will show how.

Almost every material problem of living turns out in the last analysis to be a problem of the control of energy. The householder, when he has paid his bills for fuel and electricity, is likely to consider that he has taken care of his energy requirements (*Concluded on page 334*)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Under the Burgee

NO undergraduate activity at the Institute has ever aroused such wide interest as dinghy sailing on the Charles River Basin under the burgee of the M.I.T. Nautical Association. But enthusiasm for this fine recreation is not confined to students and members of the Faculty, for Alumni throughout the country are showing their pride in the achievements of the Institute's racing skippers, now the champions of intercollegiate racing.

The latest indication of alumni interest in sailing comes in an announcement from Alfred T. Glassett, '20, President of the Technology Club of New York, that members of the club have voted to award a permanent trophy to be known as the Technology Club of New York Sailing Trophy. This prize is the result of the enthusiasm of the New York Alumni over the natural-color moving pictures of sailing at Technology, recently shown at the club by Walter C. Wood, '17, Master of the Senior House and Sailing Master. The New York trophy will be awarded annually to the student who, having had no previous sailing experience, makes the greatest improvement during the year. The cup will be an incentive for beginners to complete their training and qualify as racing skippers, thus earning the right to compete for the trophy at the end of the school year.

Student sailing has aroused greater enthusiasm at the beginning of its third year than ever before. The membership in this fast growing sport stood at 467 at the start of the year and has climbed to 533 as this is written. An additional group of 320 novice students applied for training this spring, and most of them have completed their Shore School requirements and are now getting their training as helmsmen.

Besides the recently established New York alumni trophy, the students are now racing for the Vose Cup, awarded for undergraduate supremacy; the Charles Hayden Sailing Trophy, the prize of the consolation division; and the Earl P. Charlton Sailing Trophy, which is open to graduate students and staff.

In addition to the intercollegiate championships sailed on the Charles on April 23 and 24 with Technology in the role of defending champion, two other important sailing events with other colleges are the Boston Dinghy Club Trophy Regatta on May 1, open to all colleges in the United States and Canada, and the quadrangular meet on May 8 between Harvard, Dartmouth, Brown, and the Institute. Our skippers will also visit Brown University on May 7, when they meet eight college racing teams at the opening of Brown's remodeled yacht club. Later they will visit the University of New Hampshire and possibly the United States Naval Academy at Annapolis. This last meet depends upon completion of suitable arrangements for competition during the spring holidays.

Many of those who witnessed the beginning of nautical activities at the Institute thought that once the novelty of sailing had passed, the growth of the activity would settle down to a modest annual increase. This year's enthusiasm and the crowded classes in the voluntary Shore School courses show, however, that the rate of growth is steadily increasing rather than diminishing, and indications are that the warm days of this month will find some 800 students on the rolls of the Nautical Association.

Course Changes

CHANGES in the Institute's courses in electrochemistry and mining engineering, which will bring the advantages of the former to a larger number of students and broaden the scope of training in the field of discovery and utilization of mineral resources, have been authorized by the Executive Committee of the Corporation.

The Visiting Committee of the Department of Metallurgy recently reviewed the status of electrochemistry at the Institute and has made three recommendations concerning it. The Committee pointed out that the substance of a course in electrochemical engineering has been, and still is, an extremely valuable factor in the field of technology. However, in view of the low registration in the course and because of the expanding opportunities for the application of the methods of electrometallurgy and electrochemistry to both science and industry, the Visiting Committee urged that the advantages of training in these subjects be brought to a much larger circle of students. The Department of Metallurgy, therefore, will assume the responsibility for providing that all students in metallurgy are adequately trained in electrometallurgy, both electrothermic and electrolytic.

The Department of Chemical Engineering has been asked to undertake that part of the instruction and research in this field concerning substances other than the metals. With these plans in view the Executive Committee has authorized the discontinuance of the course in electrochemical engineering in June, 1940, after the present sophomores and juniors have completed the present curriculum.

Recent studies by the Visiting Committee on the Department of Mining Engineering have emphasized the trend in the mining industry to demand engineers with special training in physics, chemistry, and geology, as well as in economics and business administration. These studies also show that the mining schools in the great mineral states adequately fill the local demand for men trained in the practice of mining operations, whereas the specialized curricula of mining departments of eastern universities have become relatively less significant or have been discontinued entirely.

The Institute's Department of Mining has had a very distinguished history, both in the quality of the men who have been graduated from it and in its contributions to the development of mining enterprise all over the world, especially during the decades when the mineral resources were first being explored by modern methods, and great mining companies were in the process of formation. The changed circumstances of the present day, however, indicate that the best use of the Institute's facilities in training for the general field of the discovery, recovery, and processing of minerals calls for a change of emphasis and a broader approach. The Executive Committee has accordingly voted to discontinue the special curricula in mining in June, 1940. The Department of Metallurgy plans to pay special attention to the subject of ore dressing, and the Department of Geology expects soon to present to the Faculty a proposal for the extension of its work on mineral resources, placing special emphasis on the scientific phases of this important field.

In order that this change may be made without disturbing the plans of students already enrolled in the Mining Engineering Course, the present sophomores and juniors will be carried through to graduation in June, 1940, under the old schedule.

Summer Conferences

FIVE special study programs, designed mainly for professional workers, will be held at the Institute this summer under the auspices of the Committee on the



Research instruments developed in the Institute's textile laboratory are contributing importantly to a better understanding of textile fibers and their utilization. One of the latest of these, the constant-load rate inclined-plane tensile tester, is a significant link between chemistry and microscopy in studies of the fundamental structure of textile fibers. This instrument, on which Professor Edward R. Schwarz, '23, is testing a specimen, measures repeated stress or fatigue, a factor only recently considered in the textile industry. Thus it is possible to distinguish between the plastic and elastic properties of the material — information of interest to manufacturer and consumer, as anyone whose trousers bag at the knee will agree

Summer Session. They will treat spectroscopy, colloid chemistry, textile analysis, strength of materials, and ceramics. The programs will last, in general, from three to six weeks, during which time special courses or lectures will be given. In several programs facilities for research, either independent or supervised, will be available to qualified men for longer periods.

Courses in practical spectroscopy, for example, including lectures and laboratory work on the analysis of materials and on the general application of the spectroscope and its auxiliary apparatus to the problems of science and industry, will be held from June 13 to July 23. The laboratory will be available for research from June 1 to August 1, and the sixth annual Spectroscopy Conference is scheduled for July 18, 19, and 20, at which qualified authorities will discuss the application of the spectroscope to biology, medicine, chemistry, metallurgy, mineralogy, and industrial and engineering problems. The program is under the direction of Professor George R. Harrison of the Department of Physics.

For the third year a special summer program in theoretical and applied colloid chemistry and colloid physics will be offered for five weeks, beginning June 13. This program will be under the direction of Professor Ernst A. Hauser of the Department of Chemical Engineering and will consist of lectures on fundamentals as well as on industrial applications, round-table conferences devoted primarily to recent advances in the field and to current research, and laboratory investigations of special problems. Guest speakers from various industries, as well as outstanding experts in the field who will be in Cambridge to attend the 15th National Colloid Symposium at the Institute on June 9, 10, and 11, will be among the lecturers.

The summer session in principles of textile analysis will be held for six weeks, beginning July 25, under the direction of Professor Edward R. Schwarz, '23, of the Department of Mechanical Engineering. The work will include lectures and demonstrations, illustrated by experiments and moving pictures, together with laboratory exercises in the physical and optical analysis of textiles, textile microscopy, and fabric structure.

The program on the strength of materials, to be held from June 13 to July 8, will be divided into three sections — timber, concrete, and general strength problems — with lectures in each field, as well as comprehensive laboratory investigations. There will also be two seminars devoted to recent developments in the fields of structure of metals and structural stress analysis, and two all-day conferences, July 7 and 8, on timber and concrete, at which various aspects of these two subjects will be discussed by experts. The program will be directed by Professor John M. Lessells of the Department of Mechanical Engineering.

The fifth special program, in ceramics, will be divided into two sections, the first dealing with the nature of glass, to be held from July 11 to July 16, and the second with the reactions in ceramic materials on heating, to be held from July 18 to July 23. Laboratory experiments designed primarily to familiarize the student with modern apparatus will be included. Professor Frederick H. Norton, '18, of the Department of Metallurgy is in charge of the program.

Alumni Day at Technology

Commemorating on June 6 the Final Departure of the Institute from the Rogers Building

THE PROGRAM

June 6, 1938

Notice to Alumni: When you receive your final notice and application form this month, please return it promptly. Both the luncheon and the banquet last year drew unexpectedly large attendances, and this year the committee wishes, by adequate advance information, to be prepared to care for those who apply early.

Morning

- 8:30 A.M.-10 A.M. REGISTRATION in the main lobby of the Rogers Building, 491 Boylston Street
- 8:30 A.M.-12:30 P.M. RETROSPECTIVE EXHIBITION of work in the School of Architecture, Main Exhibition Room, Rogers Building
- 10 A.M.-12:15 P.M. SYMPOSIUM, Huntington Hall, Rogers Building

The Impact of Science on the Arts

Speakers

- WILLIAM EMERSON, *Dean of the School of Architecture*, welcoming guests to Rogers and introducing:
- A. LAWRENCE KOCHER, '13, *Editor, the Architectural Record*, presiding
- WALDEMAR B. KAEMPFERT, *Science Editor, the New York Times*
- Title: "Science and Society"*
- JOHN MILLS, '09, *Director of Publicity, Bell Telephone Laboratories, Inc.*
- Title: "Engineering and Art"*
- MALCOLM COWLEY, *Literary Editor, the New Republic*
- Title: "Science and Letters"*
- FREDERICK KIESLER, *Director of Laboratory for Design Correlation, Columbia University*
- Title: "Biotechnics and Architecture"*
- 12:15 P.M.-12:40 P.M. FAREWELL TO ROGERS, Huntington Hall. Address by Charles-Edward A. Winslow, '98
- 12:40 P.M.-1 P.M. Transfer of activities to M.I.T. in Cambridge. Bus service from the Rogers Building to Cambridge will be provided

Afternoon

- 1 P.M.-2 P.M. LUNCHEON in Du Pont Court, M.I.T., Cambridge
- 1 P.M.-5 P.M. EXHIBITIONS in the Main Lobby and adjacent areas:
- (1) The growth of an industrial design
 - (2) Scientific forms
 - (3) Streamlining in fact and fancy
 - (4) Photographic exhibition under the auspices of The Technology Review

- 2 P.M.-4 P.M. JOINT CLASS DAY EXERCISES with the Class of 1938 in Lowell Court. Alumni speakers: For the Class of 1888, WILLIAM G. BESLER, *Chairman of the Board, Central Railroad of New Jersey*; for the Class of 1913, LAURENCE C. HART, *General Sales Manager, Johns-Manville Sales Corporation*
- 4 P.M.-4:15 P.M. Adjourn to the steps of the new Architecture Building on Massachusetts Avenue
- 4:15 P.M.-4:35 P.M. DEDICATION of the new home of the School of Architecture
- 4:45 P.M. DEDICATION of the new Davis R. Dewey Memorial Library in Room 5-330

Evening

- 6:30 P.M.-10:30 P.M. STEIN-ON-THE-TABLE DINNER at the Hotel Statler, Boston

Speakers

- MARSHALL B. DALTON, '15, *Retiring President of the Alumni Association*
- KARL T. COMPTON, *President, M.I.T.*
- JOHN MULHOLLAND, *Authority on Magic*
- Address and demonstration on "Science and Magic"*

Program for the Ladies

- I**T is expected that the morning symposium, the buffet luncheon, the afternoon exhibition will all be fully as attractive to the ladies as to the gentlemen.
- 9 A.M.-1 P.M. Room 16 in the Rogers Building will be put at the disposal of the ladies, and for those who do not care to attend the events in Rogers, the Emma Rogers Room in Cambridge will be open from 9:30 on
- 3:45 P.M. Open House at the home of Mrs. Karl T. Compton
- 4:45 P.M. Busses leave Mrs. Compton's for a short sight-seeing trip through Cambridge on the way to The Country Club, Brookline
- 6 P.M. Dinner, The Country Club, Brookline
- 7:30 P.M. Return by bus to the Statler Hotel to participate in the evening's entertainment there

Note that the morning program is in the Rogers Building, 491 Boylston Street, Boston. Go there to register. One final word: The Banquet is not to be missed. It's to be a new departure in Technology festivals and it's included in the blanket ticket costing only \$5.00.

You are invited and urged to join other Technology Alumni in this stimulating and entertaining program "... for it's always fair weather when good fellows get together ..."

Executive Fellowships

THE Alfred P. Sloan Foundation of New York has made a grant of \$15,000 to establish at the Institute five graduate, competitive fellowships for young industrial executives. These fellowships will cover 12 months of study in the Departments of Business and Engineering Administration and Economics and Social Science in a program of education for industrial leadership which expands the concept of managerial functions to include not only executive skill but social responsibility. The grant has been made by the Sloan Foundation as one phase of its endeavor to promote "the increase and diffusion of economic knowledge," namely, through the education of leaders.

Candidates for the fellowships must be between 25 and 35 years of age and must have had at least five years industrial and executive experience of a quality which merits leave of absence by their present employers. They must also have been graduated with high academic standing in science or engineering from a college or university of recognized standing. The fellowship stipends range up to \$1,750 for single men and \$2,750 for married ones. Applications closed April 25, and the awards will be made after a careful study of the qualifications of each candidate and consultation with his employer. Recipients will begin their work in June.

The program of advanced study is designed as a specific preparation for ultimate positions of higher administrative responsibility. The course, which covers a summer and a full academic year, will begin with a study of the fundamental elements of industrial activity, including principles of economics, production, marketing, finance, accounting, law, and labor. Emphasis will be placed on the responsibilities of the executive to society and on external influences bearing on industrial administration, such as international economics, labor legislation, governmental relationships to industry, comparative political institutions, and sociological developments. During part of their program the fellows will be given an opportunity to concentrate in a chosen sector of industrial activity, such as distribution, finance, production, or labor relations. Special investigations will be required to increase capacity for creative work. The course also provides for conferences and social contacts with 30 leading American industrialists, government officials, and labor leaders. Development of work and life habits consistent with administrative progress will also be considered.

The new fellowships constitute the second group in business administration and economics sponsored at the Institute by the Sloan Foundation. The first five fellows complete their work next month.

Staff Promotions

THE work of many younger members of the Faculty, as well as the contributions of a number who are well known to several generations of undergraduates, is recognized in the annual staff promotions announced in April. Professor Walter C. Voss, '32, was appointed to take charge of the Course in Building Engineering and Construction, succeeding the late Ross F. Tucker, '92,

with whom Professor Voss was closely associated until the former's death last December. Howard R. Bartlett, appointed acting head of the Department of English and History during Professor Pearson's leave of absence, was promoted to the rank of associate professor.

Four well-known members of the Faculty advanced to the rank of professor were James A. Beattie, '17, and Tenney L. Davis, '13, of the Department of Chemistry; Carle R. Hayward, '04, Metallurgy; and Carlton E. Tucker, '18, Electrical Engineering.

Those who were promoted to the rank of associate professor were Frederick J. Adams of the School of Architecture; Joseph C. Boyce and Robley D. Evans of the Department of Physics; Matthew R. Copithorne, Frederick G. Fassett, Jr., and Dean M. Fuller of the Department of English and History; Charles S. Draper, '26, and Heinrich Peters of the Course in Aeronautical Engineering; Harold E. Edgerton, '27, of the Department of Electrical Engineering; Edwin R. Gilliland, '33, of the Department of Chemical Engineering; Charles W. MacGregor and Carl L. Svenson, '19, of the Department of Mechanical Engineering; Eugene Mirabelli, '19, of the Department of Civil Engineering; John T. Rule, '21, of the Section of Drawing; and John W. Williams, Biology and Public Health.

New assistant professors are Archibald W. Adkins, '29, and Peter E. Kyle, '35, of the Department of Mechanical Engineering; Walter E. Albertson, '33, of the Department of Physics; Bernard S. Gould, '32, of the Department of Biology and Public Health; Douglas M. McGregor of the Department of Economics and Social Science; William T. Martin and George P. Wadsworth, '30, of the Department of Mathematics; Lawrence A. Monroe, '34, of the Department of Chemical Engineering; Donald W. Taylor, '34, of the Department of Civil Engineering; Chester M. Van Atta and Lester C. Van Atta, Physics.

Promoted to the rank of instructor were Ralph J. Bowley and Brandon G. Rightmire, '37, of the Department of Mechanical Engineering; Harold A. Fidler, '34, of the Department of Civil Engineering; and John D. Trimmer of the Course in Aeronautical Engineering.

Elected

WALTER G. WHITMAN, '17, Head of the Department of Chemical Engineering, and ten Institute juniors have been elected members of the Institute chapter of Tau Beta Pi, the national honorary engineering fraternity. The new student members are Woodson W. Baldwin, Jr., of Brookline, Mass.; Harold Chestnut of Schenectady, N.Y.; John R. Diver of Waukegan, Ill.; Roy C. Heacock of Uniontown, Ala.; Stuart Paige of Port Chester, N.Y.; George G. Poulsen of Readville, Mass.; Charles T. Ryder, Jr., of Colorado Springs, Colo.; Paul E. Sandorff of Niagara Falls, N.Y.; John C. Vyverberg, Jr., of Rochester, N.Y.; and William F. Wingard of Baltimore, Md.

Visiting Committee Reports

DEPARTMENTAL Visiting Committees are appointed by the Corporation and in general are composed of two members nominated by the Alumni

Council, three from the membership of the Corporation itself, and two selected at large. Twenty-two of these Committees, with a combined membership of 154, are now actively serving the Institute by placing at the disposal of the departments their wide experience, their objective judgment of the departments' work and plans, and their strong support in helping the departments to gain approved objectives.

The reports of these Committees are published in condensed form from time to time in these pages and provide not only interesting comment on the Institute's educational work but convincing evidence as well of the help which these Committees are rendering.

This month we present reports on the Department of English and History and the Department of Military Science and Tactics.

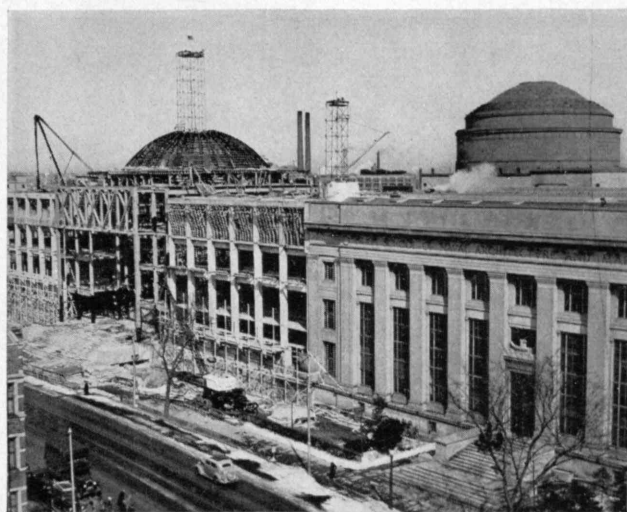
MILITARY SCIENCE AND TACTICS*

COLONEL THOMAS-STAHLE, '22, Commandant of the Institute's military science unit, reviewed for the Committee the current situation of the military training plan at Technology, both in regard to the required training for the freshmen and sophomores, which is known as the basic course, and the advanced voluntary courses of the Reserve Officers' Training Corps, which lead to commissions as second lieutenants in the Officers' Reserve Corps upon graduation from the Institute. This advanced training is divided among five services: Signal Corps, Corps of Engineers, Ordnance, Coast Artillery Corps, and Chemical Warfare Service.

The first question to be discussed in detail was the maintenance at the Institute of an R.O.T.C. The Committee expressed its wholehearted belief in, and its support of, this advanced training. Viewed solely from the student and general Institute viewpoint, without consideration of any obvious national obligation, the Committee was of the unanimous opinion that R.O.T.C. units were of distinct advantage, and should be supported and encouraged. Formerly funds were allotted by the Federal government to permit the units at the Institute to train, in the advanced course, 300 students, half of whom would be juniors and half, seniors. However, due to the extension of R.O.T.C. units in other colleges throughout the country, without the corresponding increase in funds, the R.O.T.C. unit at the Institute is now limited to just over 200 students. The Committee considers this a most unfortunate situation.

Whereas in some of the colleges the full quota is not taken up and in others nearly all applicants who desire to take the advanced course are accepted, here at the Institute there are regularly between two and three applicants for every position. Because of the necessary rejections due to the limited size of the unit, many excellent men are lost to the service. Special attention should be directed to the fact that all of the R.O.T.C. units at Technology are technical and, accordingly, represent the most difficult type of officer training in a national emergency. Reference is further made to the very large number of Technology men who rendered

* Members of this Committee for 1937-1938 are: H. B. Richmond, '14, Chairman, William E. R. Covell, '23, the late Brigadier General Alston Hamilton, Colonel Clifton C. Carter, '09, John J. Pelley, and Captain Walter L. Medding, '17.



Christian Science Monitor

DOME NO. 2

... takes shape as the new building, to be named and dedicated on Alumni Day, June 6, rises on Massachusetts Avenue

military service in the grade of officer during the World War, and attention is directed to the high scholastic standards maintained at the Institute, making available the very best type of applicant for positions in the Officers' Reserve Corps. The Committee is of the unanimous opinion that this is a sufficiently important national situation to be brought to the attention of the proper military authorities and recommends that the Executive Committee of the Corporation empower President Compton to endorse a request from Colonel Thomas-Stahle that the R.O.T.C. advanced course at the Institute again be permitted to enroll 300 students.

Colonel Thomas-Stahle reviewed the changes that had been made in the curriculum to lighten the load on the students taking the advanced R.O.T.C. courses. The basic 20 unit-hour requirements have been reduced to 12 unit-hours in all except the Coast Artillery, which is now 16 unit-hours. This has been accomplished either by having regular Institute technical courses accepted by the War Department, or having such courses as Military History and Policy of the United States taught by the Institute (see page 322) and allowing the credits to apply against General Studies as well as against the hours called for on a military program. This situation seems well in hand, and no additional action is required by the Committee.

However, in connection with the course on military history, it is important that additional library facilities be obtained. This could be done either by the procuring of some additional books for the general library or by the acquiring of a library now in Boston. The proper housing at the Institute of this library and the actual obtaining of it, together with its endowment funds, represents a rather difficult problem, but it is one that should receive the earnest attention of the Institute and of this Committee. Aid in this direction is being obtained through the chairman of the Friends of the Library.

The Committee expressed considerable interest in, and its wholehearted approval of, the work being done by Colonel Thomas-Stahle in creating general interest

in the basic military training course. The improvement of the lectures, the increase in drill in place of some of the lectures, the establishment of a merit to be known as the Order of Military Merit, and the possibility of increasing rifle marksmanship are all constructive steps along these lines.

The Institute has, in recent years, been particularly fortunate in the very excellent personnel assigned to handle the military work. It has never been more fortunate than at present, and this Committee would feel negligent in closing its report if it did not include in its findings a statement of its gratitude to Colonel Thomas Stahle and his staff for the very high *esprit de corps* that they have established in the military training course at the Institute.

ENGLISH AND HISTORY*

THE Committee reviewed the teaching of English and history at the Institute, and all were impressed with the inherent difficulty of emphasizing the value of, and necessity for, a fine command of English on students whose first interest is preparing for a scientific career.

In order to obviate the lamentable lack of preparedness in English evinced by some applicants who are otherwise eminently desirable, Professor Pearson suggested that such students should be admitted to Technology conditioned upon their taking a summer school course in English before entrance to the Institute. While it is realized that defects in the use of English, possibly lifelong, could not be entirely rectified in a course of five weeks' training, it was pointed out that this period could be made an occasion for impressing upon the students—and upon the schools which prepare them—the absolute necessity of their devotion to the acquisition of a proper command of our language in order to make a success of their courses at the Institute and of their professional careers later. The Committee voted unanimously to recommend that such a requirement be made.

The discussion next dealt with the possibility of inducing professors in other departments to take more interest in requiring better English on the part of their students. It was voted to recommend that this be brought to the attention of the Faculty Council, with the suggestion that a committee be appointed to consider ways and means for having this matter placed before the professors in other departments and kept before them. A recommendation on this subject was included in the report of the Visiting Committee in 1934; it is renewed now in full recognition of the fact that this has often been a matter for Faculty discussion and action. The further suggestion was made that professors in other departments should decline to receive badly worded theses or papers but should turn them back to be rewritten, and that students in the upper years who showed a consistent lack of proficiency should be referred to the English Department for special training if they wish to complete successfully their studies at the Institute.

* Members of this Committee for 1937-1938 are: W. Cameron Forbes, Chairman, William H. Bovey, '94, Roswell G. Ham, George P. Dike, '99, Albert H. Wiggin, Arthur M. Schlesinger, and J. Rhyne Killian, Jr., '26.

Professor Pearson then brought before the Committee the possibility that the instruction in the subject known as Military History and Policy of the United States, hitherto given by the Department of Military Science and Tactics and required of those students seeking Reserve Officers' Training Corps commissions, might be put in charge of the Department of English and History (see page 321). He said his Department could take over this work with the increase of his staff by only one-half of the time of one person. The Committee recommends to the Corporation that it give favorable consideration to this suggestion.

The Committee was pleased to learn that the subject of public speaking had been restored to the Institute curriculum as a General Study, as it believes that training in oral expression will prove helpful to young men in all walks of life.

Combination for Simplicity

AN astrophysicist employing a naval architect's methods works at a task of expert draftsmanship under the remote-control direction of a chemist and a mechanical engineer 400 miles away, to provide more efficient means of answering the mechanical engineering problems of turbine design. Result of this characteristic mingling of modern scientific disciplines is a blueprint chart, 30 inches wide and 15 feet long, containing a maze of cross lines and beautifully drawn sweeping curves. This, an enthalpy-entropy chart based on the "Thermodynamic Properties of Steam," published last year by Professors Joseph H. Keenan, '22, and Frederick G. Keyes, mechanical engineer and chemist, respectively, of the Institute, was executed under their supervision by Dr. Carol Anger Rieke. Pressures are plotted against temperatures on the chart, which is for use in the design of big turbines exhausting to subatmospheric pressures. The chart incorporates the data from the Keenan-Keyes steam tables and avoids the necessity of interpolation to determine a desired figure.

The master copy of the chart is in the possession of the General Electric Company, acting as custodian for the sponsors of the project, who included, in addition to the General Electric, the Allis-Chalmers Manufacturing Company and the Westinghouse Electric and Manufacturing Company. After the data from the tables had been plotted, the delicate task of laying off the long, sweeping curves was carried out by Dr. Rieke, who used the naval draftsman's splines—long, flexible strips of wood or celluloid—to produce lines of remarkable smoothness and uniformity. The work occupied time in the last year and a half, during most of which Dr. Rieke was at Johns Hopkins University in Baltimore, where, through the coöperation of Professor A. G. Christie, accommodations for the project were made available. Professors Keenan and Keyes then conducted their supervision by remote control.

A theoretical steam-rate table of 60,000 entries—more than in the steam tables on which it is based—answers the question of how much steam must be put through a perfect turbine to secure one kilowatt-hour from it. The American Society of Mechanical Engineers is publishing this table at the request of the sponsors.



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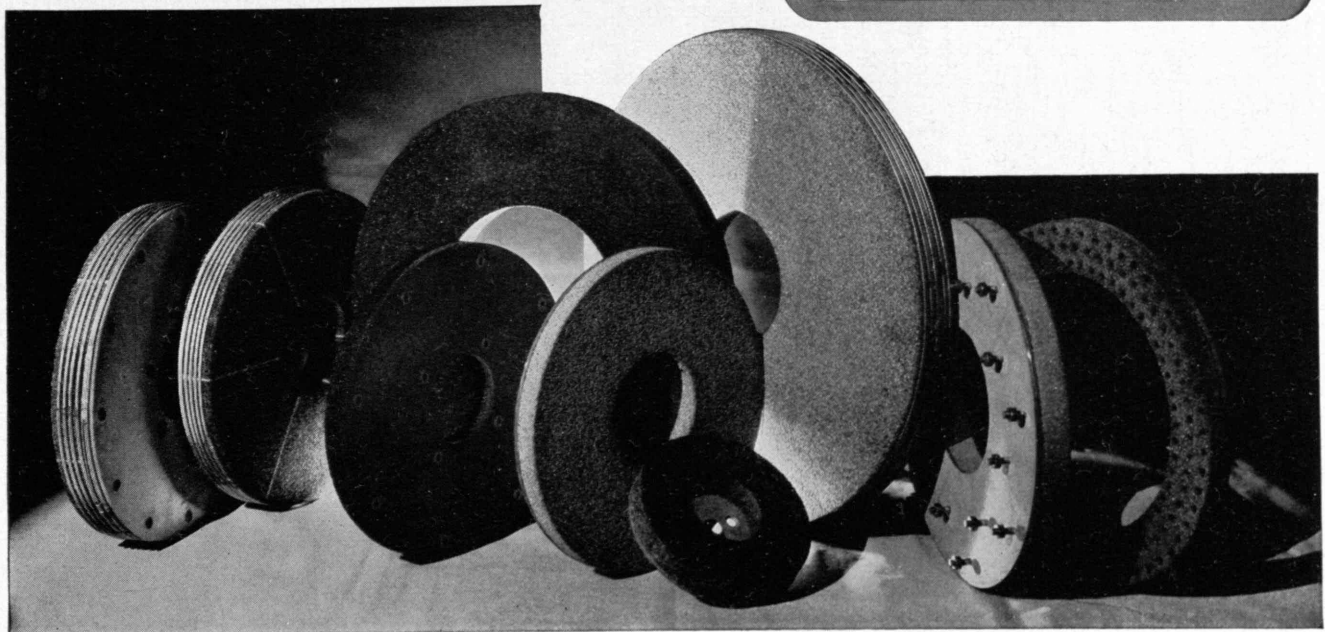
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THE NEW ATTACK ON EVEREST

(Continued from page 308)

Nearly ten years elapsed between this ill-fated expedition and the one led by Hugh Ruttledge in 1933. This 1933 Expedition seems to have satisfied most Everest authorities on a number of points. First they are convinced that Mallory was wrong in trying the ridge and that the Second Step is unclimbable. This has forced a new detour which carries the climber below the steps on a long traverse ending in a *couloir* which reaches toward the summit. Aside from the danger of rockfalls, many mountaineers favor snow-filled *couloirs* as natural avenues to the top of a mountain. But this *couloir*, which has been reached by two sets of climbers, seems to have unusually difficult snow. The conclusion is that it, too, must be avoided and that the ascent must be made along its farther wall. It is evident that the original theory that "Everest is not a technically difficult mountain" must be revised. It is even possible that the entire plan of the campaign is at fault. Those who feel certain that this is a stupid comment might do well to remember the many futile attacks on the Matterhorn, all via the Tête de Lion, until Whymper made his accidental discoveries about the east face which had hitherto been regarded as sheer and unclimbable but which turned out to be almost a natural staircase. Whatever may be the easiest route on Everest, it is pretty clear that parties for some time to come will continue the approach via the Mallory route as far as the northeast shoulder and that thereafter they will abandon his ridge and, traversing, seek the summit by what is called the Norton Route or may even seek a lower traverse in accordance with suggestions by Smythe.

The 1924 Expedition had indicated the wonderful possibilities of slow acclimatization in the case of Odell. The 1933 party showed what can be done with scientifically planned diet, although the food failed to titillate the palates of the men who went high. Oxygen was set in its place by this group as an excellent shot in the arm but not as a steady ration. This party also introduced wireless telegraphic communication between the base camp and the upper camps and with Calcutta as well. Communication with the base camp sometimes broke down in critical moments, but that with Calcutta was useful and gave warning of breaks in the weather. Moreover, this group set a final camp at 27,400 feet. The 1936 Expedition met an over-early monsoon and failed to establish contact with the mountain at all.

What of the prospects for 1938? Like every previous party this one is well manned. It has learned more about food and clothes and temperaments. Its leader, Tilman, has already proved his distinction on Nanda Devi in 1936. In Odell, though no longer a young man, it has an experienced Himalayan, probably the best Himalayan climber still living. His exploits in 1924 in support of Mallory would give him that place alone, but they would be confirmed by his ascent of Nanda Devi in 1936. Tilman, Odell, Smythe, Shipton, Lloyd have all proved on previous Himalayan expeditions that they acclimatize well to high altitude, and the best evidence is that acclimatization carries over from one year to another to a rather remarkable degree.

In the last analysis, however, there are still many imponderables. The weather is the greatest. It alone can destroy an expedition. The climbing conditions on any great mountain vary from year to year and especially so on Everest. If the upper slabs are relatively free from snow, if there are no technical difficulties too great for man at 28,000 feet, if the monsoon comes slowly and the intermediate days are smiling days, then this may be the year. Hunch says it is. But logic remembers Mallory's probably conservative statement of the odds against success for any expedition being 50 to 1.

And what of it if they do succeed? The answer may not be important. If any significance exists, it is in man's demonstration of tenacity of purpose and willingness to sacrifice against heavy odds for the sake of an idea. Success on Everest is just as important as was the first ascent of the Matterhorn—so much and no more.

Mountaineers have ceased trying seriously to persuade lowlanders that science has much to gain from these expeditions. Every group still contains a scientist or two; a geologist, almost certainly; a botanist or naturalist, possibly; a meteorologist, perhaps. But when the final work begins, these scientists are of little value unless they are first of all mountaineers, and it is on the sum of their mountaineering ability and their probable tolerance—psychic and physical—to high altitude that they are chosen. Nor is there wonder that their scientific attainments fall into the discard.

No vegetation has been found on Everest much above 19,000 feet. The last 10,000 feet shelter neither flora nor fauna. These practically cease to exist a bare 300 feet above the traditional site of Camp I. No special rocks await the geologist's hammer at high altitudes. It has already been amply demonstrated by Odell in 1924 that it is possible for a human to go without oxygen and comfortably and more than once to heights of 27,000 feet. If physiological tests of man's capacities in rarified atmospheres are in question, they can be made under better controls in a London laboratory and at considerably less expense than the \$50,000, or so, which a modern Everest party needs. Mapping and meteorological studies, as was demonstrated by the 1933 *Houston-Westland* expedition, can be carried on more successfully from the air. Though cold and windy, climatic conditions are no worse on Everest than those already dealt with by many a polar explorer. The conquest of this peak will add nothing to mountaineering knowledge; though difficult, the mountain apparently poses no climbing problem which has not been solved under less arduous circumstances in the Alps or the Caucasus. Even the view is not likely to entrance; views from topmost summits are, even under good conditions, not so fine as those from points of mid-elevation, while in the case of Everest the common testimony of those who have gone high is that mental lassitude obscures anything more than the mildest appreciation of the wonders set before the climber. If the assaults on Everest are the sublimation of mountaineering, they are equally clearly to the practical man the sublimation of nonsense. To the mountaineer, though, they are more. The sole purpose of climbing Everest is a mystic one—a religious one; if not a Christian one, it is nonetheless a sort of quest for a Grail.

(Concluded on page 326)

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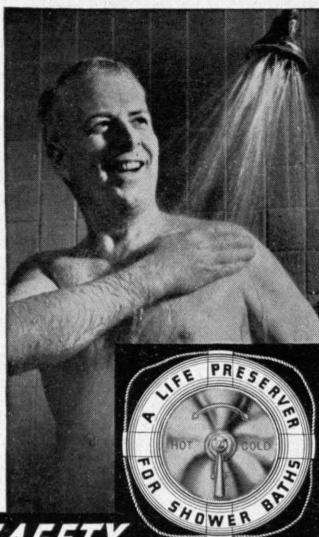
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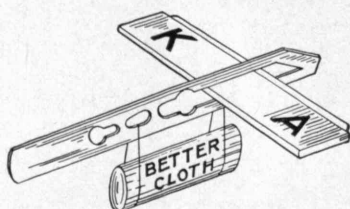
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THE NEW ATTACK ON EVEREST

(Concluded from page 324)

And when it is climbed? Of course little will have been proved. The men who do succeed will be no braver men, no better climbers, than those who have tried and failed. There will still be unclimbed peaks to surmount. And in a sense the world will have lost something — a tiny objective, perhaps, but possibly an important one for the spirit. Mountain climbers are modest folk, and the final tale of Everest will not be so thrilling as its predecessors. It is possible to portray at full scale the difficulties which overcome one but, as Tilman's account of the Nanda Devi expedition shows, it is not possible to write a ringing description of the difficulties which one overcomes. One is reduced to a laconic "we finished the climb by the ridge without further adventure, reaching the top at three o'clock."

So, too, must have been the final account of Parsifal when he returned to Monsalvat. The quest of an idea is more important than its attainment. However unscientific their objective may be, anticlimactic as may be its attainment, to Tilman and his gallant band *The Review* wishes all the possible favors of Nature during the month to come. They need no other.

MECHANICAL TESTS FOR DRIVERS

(Continued from page 311)

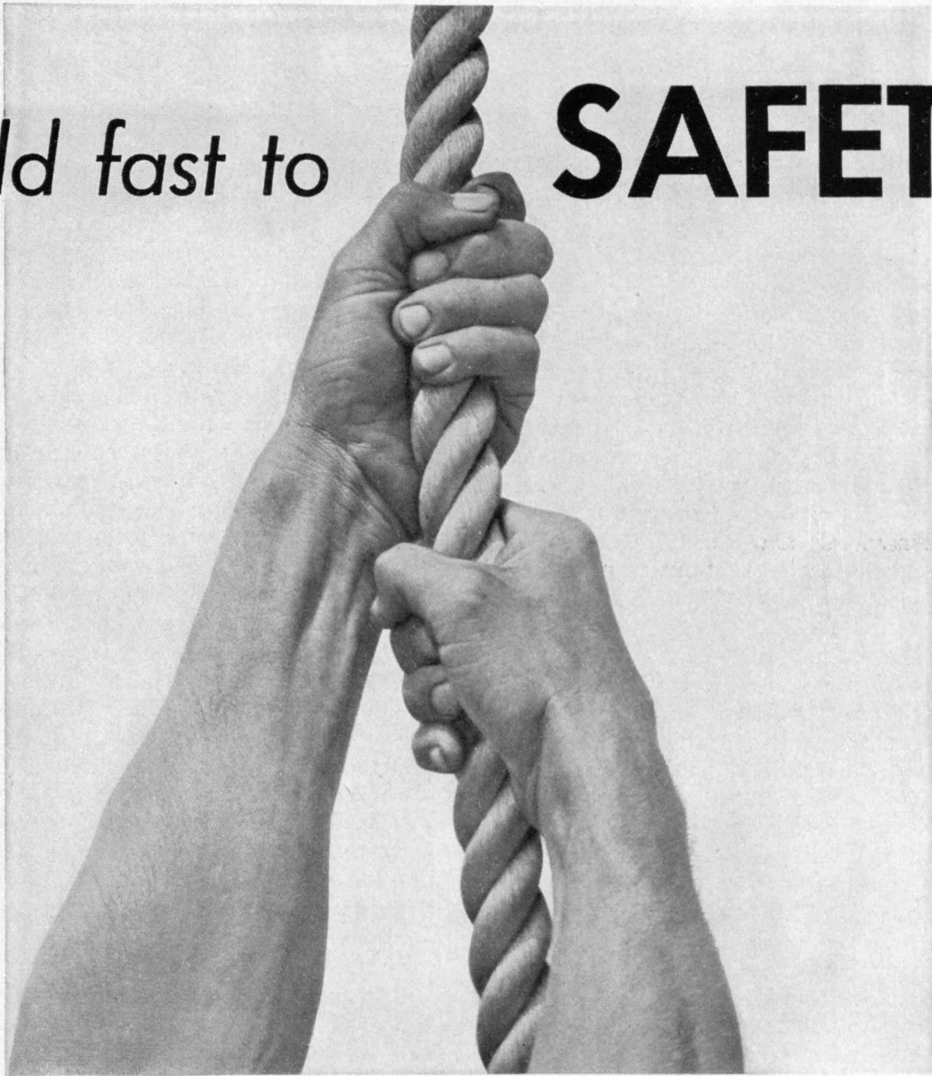
devices that draw continuous curves have the disadvantage of requiring much time for interpretation of results after the test is over. In order to save time in statistical analysis, we have so far avoided the use of recorders in favor of indicating instruments.

You will note that whereas there are 12 tests in the Harvard driver's clinic, there are only two pieces of equipment (Figures 1 and 2). Driver test apparatus is popular. It has to be moved around from place to place. This demands compactness and portability, also ability to stand hard knocks and to operate under all conditions. All of these factors and many more have been considered in the evolution of our equipment over a four-year period.

Assembling many tests to form a clinic permits us to find a weakness in everyone. Once a clinic supervisor pierces the armor of conceit of Mr. Average Driver, he can often get him to break down and talk about himself. Demonstrating a relevant sensory or motor defect will jolt the confidence of any individual and open the way to self-study and self-discovery.⁸

It is not, however, the result of any one test, even if the rating in it is low, which is most important; rather it is the composite picture of the results of all of the tests. The best way to demonstrate this is to refer to the sample profile graphs (Figures 3, 4, and 5). Figure 3 is the rare individual who is superior in most all tests. Figure 4 is an average individual — not typical because there are no two profiles alike. Profile graphs vary greatly from person to person. Some are predominantly average; some are a combination of chiefly superior and below average scores. The majority, however, like Figure 4, contain scores in all three (Concluded on page 328)

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MECHANICAL TESTS FOR DRIVERS

(Concluded from page 326)

ranges, indicating superiority in some abilities, average in others, and below average in others. Figure 5 is the unskillful person. The profile is therefore a diagnosis of the strengths and weaknesses in sensory and motor make-up, or skill.

The subject cannot, however, receive the maximum benefit from the battery of tests unless the diagnosis is put into the hands of a skillful clinical supervisor. The experienced clinician can, during an interview, interpret the test data. By courteous treatment and by genuinely interesting himself in the subject's welfare, the clinic supervisor can encourage him to talk freely about his accidents or near accidents. There is no better and more lasting teacher than self-discovery. The best supervisor is the one who, by his speech and demeanor, encourages mental and behavioral analysis. Autobiographical reminiscence about his driving is of great benefit to the subject when considered in the light of an objective clinical analysis of weaknesses.¹

In summary, the mechanical tests developed by the clinic of the Harvard Bureau for Street Traffic Research have evolved by frequent redesign as a result of factors discussed. The assemblage of apparatus forming a clinic must be operated by a trained supervisor. He must be skilled not only in diagnosis but also in the treatment and care of drivers by their self-enlightenment and training. Just as in certain cases the doctor prescribes rest to let nature cure the patient, so the driver clinic supervisor may prescribe less speed and perhaps less driving until the ills disclosed by the clinic are cured or compensated for. Similarly, just as in certain cases the psychiatrist prescribes self-analysis and a direct attempt at overcoming faults, so the clinic supervisor may prescribe analysis by back-seat drivers and a training course to overcome defects. Or like the vocational counselor, the clinic supervisor may prescribe giving up automobile driving or at least avoiding making a living at it. Driver clinic apparatus interests drivers in themselves. It satisfies the human craving to find how one compares with the average person. It is found to be a great aid to a state driver-training program.⁶

¹ H. R. DeSilva and S. Abercrombie, "Clinical Treatment of Traffic Violators," *Police Journal*, Vol. 24, No. 2, pp. 3-7, December, 1937.

² W. H. Forbes, D. B. Dill, H. R. DeSilva, and F. M. VanDeventer, "The Influence of Moderate Carbon Monoxide Poisoning upon the Ability to Drive Automobiles," *The Journal of Industrial Hygiene and Toxicology*, Vol. 19, No. 10, pp. 598-603, December, 1937.

³ H. R. DeSilva, "Facts About Automobile Drivers," *Harvard Alumni Bulletin*, Vol. 40, No. 14, pp. 448-451, January 21.

⁴ H. R. DeSilva, "Human Element in Stopping a Car," *Brake Service*, Vol. 8, pp. 183-186, February.

⁵ H. R. DeSilva, "Occasional Accident Operator," *Canadian Public Safety Journal*, April.

⁶ H. R. DeSilva and P. Robinson, "The Driver Clinic in Delaware High Schools," *Safety Education*, pp. 174-178, March.

⁷ H. R. DeSilva and T. W. Forbes, "Driver Testing Results," Monograph, Harvard Traffic Bureau, 1937.

⁸ H. R. DeSilva, "Applications of Driver Clinics," *Safety Engineering*, April.

⁹ H. R. DeSilva and R. Channell, "Driver Clinics in the Field," *Journal of Applied Psychology*, February.

¹⁰ H. R. DeSilva, "A Bibliography on Driving Safety," *Harvard Bureau for Street Traffic*, p. 157, 1937.

SCIENCE AND CULTURE

(Continued from page 314)

Massachusetts Bay; the scientific age — in which the practical results of that discipline come home to everyone — is contemporary with such recent personages as Queen Victoria and Abraham Lincoln. Those results of applied science which constricted the world to internationalism and expanded industry to the factory — the telegraph and the steam engine — date back to late 18th Century experimenting. The consequence of abstract science which most upset the average man — the Darwinian hypothesis — is not yet nonagenarian. It is only within the last 100 or 150 years that, as Sir William Dampier puts it, "the whole conception of the natural Universe has been changed by the recognition that man, subject to the same physical laws and processes as the world around him, cannot be considered separately from the world, and that scientific methods of observation, deduction and experiment are applicable, not only to the original subject-matter of pure science, but to nearly all the many and varied fields of human thought and activity."

The play of science as a force in the complex of civilization, which in actuality has been under way since the time of Newton, reached only in the time of our grandfathers that powerful movement required to make it obvious to the generality. When the phase of recognition was reached, a delicate balance seemed in danger of being upset, the complex seemed in danger of disruption, and their very inertia stirred defenders of the *status quo* to belabor science, commencing thus too late an effort which must have been commenced centuries earlier to succeed.

A temptation to digress is presented by the basic inutility of such attacks and defenses as the mid-19th Century battle, not to speak of latter-day protestations about scientific holidays and truces to research. Argument pro and con may deflect into a certain channel but cannot stop the flow of a social force, once the intellect has released it. As well talk of this nation's "rejecting" capitalism, or of Russia's "adopting" communism. Doubtless, Huxley and his cohorts served to avert possible hindrances to scientific progress and so to permit the speedier development of science as part of the social ferment out of which the idea of culture is distilled. Any case beyond this, though, they need not have argued, for the inevitabilities were arguing it more cogently.

In part as a consequence of their vigor, however, the process of absorption has been so swift that in less than a half century, the second phase, that of appropriation, has been reached. That the conception of general culture is being revised because of the appropriation of scientific materials and techniques can hardly be doubted after even a hasty glance at contemporary indications. This is no place for a schoolmaster's harangue on the displacement of the classics from college curricula. That displacement may not be so very significant anyway. However, the rise of schools of university grade, professionally specialized in the sciences, is a different matter. So is the action of such an organization as the Associated Press, (Continued on page 330)

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SCIENCE AND CULTURE

(Continued from page 328)

when it sets up an editorial division devoted to science, partly as response to popular demand, partly as performance of the editorial responsibility of recording that which is important. So is the effort, however amateurish, of government to utilize objective method, whether through Democratic brain trusts or through Republican professorial program committees. The gradual appropriation by literature of more and more scientific data and allusions is another comparable effort. The assimilation of science into poetry — the phenomenon which may be considered final witness of the incorporation of a new force into a culture — is yet to come, of course, for it belongs rightly to the third, assimilative, phase; but it may be well on the way. Establishment of a Pontifical Academy of the Sciences represents about the most striking antithesis of the cause of the greatest tumult in our grandfathers' day — the warfare, so called, of religion and science. This, the greatest clash of the phase of recognition, has been well composed; in our day, during the appropriative stage, it is replaced by economic warfare, stemming from appropriations of science which are premature, in that they lack the guidance to be expected after assimilation is complete.

On a more immediately substantial plane, the fact that the government of the United States can carry on a public campaign against syphilis, thus invading privacies hitherto sacrosanct for dozens of reasons, is symptomatic of a degree of social objectivity never before realized. A gradually increasing objectivity about the question of birth control is similarly indicative. That these two symptoms have to do with matters of sex is not altogether fortuitous, as may later appear. They are allied by the general mind in one way with yet a third — the utilization of every means made available by science for the care and preservation of individuals ill fitted for survival, if judged on a coldly objective basis.

If we choose to regard these and other similar phenomena as symptomatic of a breakdown of conventions in themselves desirable, we may incline to agree with the opponents of science in the general proposition that science menaces human traditions necessary to the good life. It is easy, looking at technological unemployment or at modern civilized war, noting the mounting record of divorce, calculating the current crime bill, listening to the flapdoodle of the radiator — it is easy to say, "So this is what science has done to our culture! Out upon it!"

SUCH easy acquiescence in this conclusion can occur only if the full import of our theory is not squarely reckoned with. Dismay over some evidences of the appropriative phase in the absorption of science into our culture echoes the dismay that attended the phase of recognition. That dismay results from failure to realize that the process is not yet complete, from failure to consider the outcomes of the third phase, assimilation.

These premature fears grow out of concern for sympathy as a constituent of individual culture. None but the most stubborn traditionalist will disagree that sci-



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ence, far from limiting the perceptive range of the intellect, has left intact all the stores of meaning which man originally possessed as instruments for the cultivation of his appreciative power and has added to them vast new stocks. So far as two of the elements of individual culture are concerned, then, we are better off because of the rise of science as a social force.

Many aspects of the appropriation of science, however, are beyond doubt repugnant to the sympathetic aspect of individual culture. The objective method, as far as it is impersonal and searching, flies in the face of many preconceptions about humanity when this method is brought to bear on human problems, as it is so frequently. The kind of mind which is swayed by incomplete and partial propaganda from antivivisectionists readily translates the photographed rat into a "soaring human boy" whose traditional wings are to be clipped, if not by the pediatrician then by the vocational director to whom he is a mere numeral possessing certain aptitudes and certain defects. Mass movements of population at governmental behest; abolition of associations set up through centuries; ticketing, docketing, and cataloguing of individuals in Social Security or in unemployment categories — these are but a few of the infringements of accustomed personal liberty which may be cited. Innate respect for human rights, one may conclude, suffers horribly from the practice of objective method; practitioner and subject alike are mechanized. The philosophy of "live and let live" which is thus outraged has been for so many years such a convenient means of winking at social injustice and abuse that reluctance to abandon or revise it is natural. And during the appropriative phase, application of objective method to social questions has, it is true, suffered often and will for some time continue to suffer from the fact that both practitioner and subject lack perspective and see only in terms of immediate application rather than long-term motive or purpose. Proper perspective has so far been acquired by practitioner and subject in only one aspect of science, the one aspect which may be said to have reached the stage of assimilation. That is medicine. When a similar appreciation of motive or purpose has been attained in other fields by practitioner and subject, each will be brought nearer to the other's status, nearer to reciprocal sympathy.

Sympathy, as realized and expressed in the older terminology, is not powerful enough at the present to deal with the new force. It is, indeed, not too much to say that those social institutions whose business it has been to develop the quality of sympathy in the concept of individual culture had fallen short of their task even before the age of science opened. Notable is the fact that it remained for science, while still in the appropriative stage, to attack the medieval squalor of the modern slum, which had gone not unquestioned but untouched through earlier decades. The inadequacy of sympathy in the older definition is evidenced by its degeneration into sentimentalism in several vitally important spheres, unfortunately in exactly those spheres where science now is being most extensively appropriated. The obscurantism which has kept venereal disease spreading is the practical aspect of sentimentalism, which links opposition to (Concluded on page 332)

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SCIENCE AND CULTURE

(Concluded from page 331)

birth control, the often cruel prolongation of human life, and a sense of outraged horror at the Parran campaign. To sentimentalism — the perversion of the older sympathy — must likewise be attributed the toleration of economic injustice, inexplicable on sincerely religious or philosophical grounds; whether this toleration can continue in face of the pragmatic attack of objective method, or whether humanitarianism will find a strong ally in what it has thought to be a foe, remains to be seen.

This is not to say that a corresponding perversion of sympathy is not latent in science. If the older definition had its Dickens, the newer already has its Hemingway, with what else to come we do not speculate. The all but sadistic self-abnegation of some scientists who, prone before the atom, profess to abandon free will, relinquish the soul, and become one with the worm (and a dead worm at that) finds its parallel in Jonathan Edwards. Truly, the perversion of sympathy is the prerogative of neither the old nor the likely new definition of individual culture.

Probabilities, however, favor in the redefinition that will follow the final assimilation of science a quality of sympathy elevated beyond that of the present, preserving the imponderable and desirable things which we now class under the term, but adding to them and illuminating some among them which we now accept without full understanding. The arbitrary discriminations of Calvinistic predestination, for example, are impossible when sympathy has been clarified by the admixture of science. The dignity of life becomes the greater as we learn more of its intricate complexity. And the arrogance of the scholastic becomes impossible before the impenetrability of a final mystery which, when touched, dissolves into yet greater mysteries. If humility is an element of sympathy, the gradual dissemination of the scientific attitude of mind into the concept of individual culture is one of man's chief avenues to sympathy. Lastly, the sense of fundamental unity which is bred of science is warranty that such perversions as are illustrated by Vittorio cannot extend into the day when the final assimilation of science into culture has been accomplished.



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(Concluded from page 316)

for the month, but every bill from the grocer or the milliner is quite as truly a bill for energy. We do not buy a basket of strawberries for the carbon, oxygen, and nitrogen atoms they contain but for the energy stored by these atoms when they join together in molecules to form sugars, starches, flavors, and vitamins. That part of the cost of a lady's hat that does not represent business acumen on the part of the milliner is for stored and directed energy. The matter of which the hat is composed is permanent, and the atoms which composed it will still exist when the hat has been discarded and burned. Only energy and the knowledge of how to apply it are needed to recreate a hat from its smoke and ashes!

Even such materials as gold, silver, and copper represent true wealth only as they represent the energy required to find, collect, and purify these metals. Our supply of matter on earth is not changing appreciably, for although a little hydrogen and helium leak off from the top of the atmosphere, far more matter than we lose in this way is brought to the earth by meteorites. Iron may rust or be scattered but it cannot be lost so long as sufficient energy remains to reconcentrate and re-refine it. Many a mine long abandoned as worthless has brought in a fortune when cheaper power or a more efficient concentrating process has made worth while the recovery of further metal from its scrap heap. Only energy is needed to gather as much of every material as we may need from the air, the land, or the sea.

It is not always necessary to wait a generation to see the practical results of new discoveries in physics. The tempo of discovery and invention is speeding up, for as more new forms of matter and energy are added to those we already control, the chance of several of them fitting together to form a useful device increases. New atomic rays discovered during one year are a year later being applied to the treatment of disease. In fact, as this is written, medical men are waiting for new rays having greater penetrating power than any yet produced; physicists are calculating how to produce them; the necessary apparatus is being assembled; and the waiting patients should shortly find available rays which are as yet unknown but on which for them so much depends.

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The scientist, like the artist, creates something new merely by rearrangement of the old. An industry that gets its profits from digging coal or pumping oil or felling timber is constantly depleting its resources; and industry that rests on a physical discovery gets its profits through fresh creation.

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We Ask You to Notice

¶ That LOUIS A. SIMON '91, supervising architect of the Treasury Department's procurement division, was awarded the Gold Medal of the Association of Federal Architects for his contribution to Federal architecture.

¶ That KARL R. KENNISON '08 was elected president and CHARLES R. MAIN '09 elected treasurer of the Boston Society of Civil Engineers on the 90th anniversary of that society. At this meeting tribute was paid to CHARLES T. MAIN '76 for his outstanding leadership.

¶ That ARTHUR C. HARDY '18, Professor of Optics and Photography, was elected to the governing board of the American Institute of Physics. DR. COMPTON is also a member of this board.

¶ That YU H. KU '25 is now vice-minister of education in China, having given up his deanship of engineering at Tsing Hua University.

¶ That DONALD W. TAYLOR '34 presented a prize-winning paper, "Stability on Earth Slopes," to the Boston Society of Civil Engineers.

¶ That CARL BRIDENBAUGH, Staff, has been appointed an associate professor of history at Brown University, beginning with the academic year 1938-1939.

Speakers

¶ HARVEY S. CHASE '83, certified public accountant, before The Economic Conference at Rollins College in January, "Budget Balancing and the National Debt."

¶ BRADLEY STOUGHTON '96, dean of engineering at Lehigh University, before the Lehigh Club of Chicago, March 18.

¶ ALEXANDER ELLIS '08, partner of the Boston insurance firm of Fairfield and Ellis, before the Advertising Club of Boston on February 1, "Lloyd's of London."

¶ JOEL I. CONNOLLY '16, assistant to the President of the Chicago Board of Health, before the Ohio Society of Chicago on March 10, "Recent Developments in Public Health." LONSDALE GREEN '87 is secretary of this organization which has "no isms," no axes to grind, and no objectives except to honor the State that, set-

tled by worthy pioneers, produced so many patriots, educators, authors and able sons in all walks of life."

¶ SAMUEL V. CHAMBERLAIN '18, artist, before the Boston Architectural Club on March 9, a talk on and demonstration of the process of etching.

¶ ERNEST H. LYONS, JR., '31, research worker, over Station WHIP on January 19, "Morrison's 'Man in a Chemical World.'"

¶ D. C. JACKSON, Professor Emeritus, a series of lectures at North Carolina State College.

¶ HARLAN T. STETSON, Staff, before the Amateur Astronomers Association on October 6, "Sunspots and Human Affairs."

Follow-up

¶ In our January issue, we mentioned two members of 1890 (Hazard and Noyes) who had been awarded honorary life memberships in the American Society of Civil Engineers. This notice prompted word concerning several members of the Class of 1890 who have also received this honor: ERNEST BROWNELL, LAURANCE CARMALT, FRANK CHASE, BURDETT MOODY, WILLIAM POLAND, SAMUEL STORROW, and ELTON WALKER. CHARLES SHERMAN and HARRY BURLEY have been notified that they will receive honorary life membership this year.

An honorary life member in this same society is SANFORD E. THOMPSON '88, who is also an honorary member of the American Concrete Institute and of Institut Naukowej Organizacji of Warsaw, Poland. SAMUEL G. NEILER '88 has been awarded life membership in the American Society of Mechanical Engineers, the American Society of Heating and Ventilating Engineers, and the American Institute of Electrical Engineers.

Written

¶ By EDWARD S. HOWE '10, an article, "Investing \$100,000 for a Widow," *Barron's*, March 21. The writer of this article submitted a program of investment to *Barron's* in 1925, which over the ensuing 13 years provided the greatest stability of income among others submitted at the same time.

¶ By MARION RICE HART '13, a book

in diary form, "Who Called That Lady a Skipper?" Vanguard Press.

¶ By WILLIAM W. DRUMMEY '16, a brochure, "History of the Building Trades in Massachusetts." Mr. Drummey, whose retirement from the Boston department of school buildings we mentioned in April, published a booklet entitled, "Historical Chapters of Unionism in Massachusetts Building Trades," in 1937.

¶ By EDWIN D. MARTIN '22, an article, "Metal Coating Processes," *Calibron Notebook*, December.

¶ By HERVEY W. SHIMER, Staff, an article, "Man's Ancestral Home," *The Scientific Monthly*, March.

DEATHS

* Mentioned in class notes.

¶ GRACE M. CLARK '81, December 20.

¶ OSCAR MUNYAN '81, March 9.

¶ ARTHUR WINSLOW '81, March 28.

¶ WILLIAM A. HALL '88, March 14.*

¶ GEORGE C. SCALES '88, March 7.*

¶ CARLOS B. MOORE '89, November 24.

¶ FREDERICK T. FISCHER '90, March 2.*

¶ ARTHUR W. RICE '91, March 25.

¶ ALBERT DUNBAR '95, December 21.

¶ EDWARD P. LANE '98, March 19.

¶ JOHN W. WOOLLETT '99, February 16.

¶ ETHEL FIFIELD BROOKS '00 (Mrs. Lawrence R.), February 12.

¶ GEORGE S. SOUTHWICK '02, November 3.

¶ STEPHEN N. MASON '03, February 18.

¶ W. ROY DARLING '04, October 14.

¶ ROBERT C. BISBEE '05, November 7.

¶ WILLIAM H. KEEN '05, February 24.*

¶ EDWIN KEITH '05, January 10.

¶ ROBERT HOWE '06, February 23.*

¶ HENRY E. K. RUPPEL '06, February 10.

¶ GUY R. DAVIS '07, July 24.

¶ WALTER LATHROP '08, October 3.

¶ ARTHUR C. MERRILL '08, January 12.*

¶ CHAUNCEY E. DOUD '14, December 19.

¶ LEO E. SEARS '15, February 21.

¶ JOSEPH A. THALER '22, March 4.

¶ EMILE CHOURRE '27, January 26.

¶ GARRETT E. MCADAMS '28, March 14.

*COMPARATIVE SCHOLASTIC STANDINGS OF FRATERNITY AND DORMITORY UNDERGRADUATE GROUPS AT M.I.T.
(as of end of First Term, 1937-38)*

<i>Comparative Standing (based on February '38 ratings)</i>	<i>Increase over June '37</i>	<i>Increase over Feb. '37</i>
Fraternity Seniors.....	3.36	*0.16
Dormitory Seniors.....	3.40	*0.14
Fraternity Juniors.....	3.20	0.10
Dormitory Juniors.....	3.33	0.11
Fraternity Sophomores.....	3.21	*0.08
Dormitory Sophomores.....	3.18	*0.24
Fraternity Freshmen.....	2.86	*0.23
Dormitory Freshmen.....	3.15	0.02
General Average..... (Fraternity)	3.15	*0.08
General Average..... (Dormitory)	3.26	*0.05

FRATERNITY SCHOLASTIC STANDINGS

<i>Comparative Standing of 23 Chapters (based on February '38 ratings)</i>	<i>Increase over June '37</i>	<i>Increase over Feb. '37</i>	<i>Comparative Standing of 23 Chapters over previous five-year period</i>	<i>Comparative Standing of Freshmen of 23 Chapters</i>	<i>Rating Feb. '38</i>	<i>Comparison with Chapter Rating</i>
1. Phi Beta Delta.....	3.51	0.01	1. Theta Delta Chi	1. Theta Xi.....	3.61	+0.23
2. Theta Xi.....	3.38	0.57	2. Phi Beta Delta	2. Phi Beta Delta....	3.36	-0.25
3. Phi Beta Epsilon.....	3.33	0.115	3. Chi Phi	3. Phi Delta Theta.....	3.31	+0.06
4. Phi Gamma Delta.....	3.314	0.08	4. Phi Delta Theta	4. Phi Gamma Delta.....	3.21	-0.104
5. Chi Phi.....	3.313	0.233	5. Phi Mu Delta	5. Kappa Sigma.....	3.20	-0.02
6. Delta Upsilon.....	3.29	*0.07	6. Beta Theta Pi	6. Chi Phi.....	3.16	-0.153
7. Phi Sigma Kappa.....	3.26	0.121	7. Kappa Sigma	7. Sigma Alpha Mu.....	3.13	-0.10
8. Phi Delta Theta.....	3.25	*0.02	8. Phi Kappa Sigma	8. Alpha Tau Omega.....	3.11	-0.13
9. Alpha Tau Omega.....	3.24	0.23	9. Phi Gamma Delta	9. Phi Beta Epsilon.....	3.10	-0.23
10. Sigma Alpha Mu.....	3.23	*0.18	10. Sigma Alpha Mu	10. Delta Psi.....	3.05	-0.15
GENERAL AVERAGE ALL UNDERGRADUATES.....					3.02	
11. Kappa Sigma.....	3.22	*0.21	11. Delta Upsilon	11. Delta Upsilon.....	3.02	-0.27
12. Beta Theta Pi.....	3.21	0.05	12. Delta Tau Delta	12. Delta Kappa Epsilon.....	2.92	-0.06
GENERAL AVERAGE ALL UNDERGRADUATES.....						
13. Delta Psi.....	3.20	*0.033	13. Delta Psi	13. Lambda Chi Alpha.....	2.87	-0.31
GENERAL AVERAGE ALL UNDERGRADUATES.....						
14. Lambda Chi Alpha....	3.18	*0.184	14. Phi Sigma Kappa	14. Phi Sigma Kappa.....	2.80	-0.46
15. Phi Kappa Sigma.....	3.16	*0.19	15. Sigma Alpha Epsilon	15. Sigma Nu.....	2.75	-0.32
GENERAL AVERAGE ALL UNDERGRADUATES.....						
16. Theta Delta Chi.....	3.09	*0.36	16. Phi Beta Epsilon	16. Phi Mu Delta.....	2.66	-0.38
17. Sigma Nu.....	3.07	*0.243	17. Sigma Nu	17. Theta Chi.....	2.659	-0.171
18. Phi Mu Delta.....	3.04	*0.271	18. Sigma Chi	18. Beta Theta Pi.....	2.64	-0.57
19. Delta Kappa Epsilon....	2.98	0.05	19. Theta Xi	19. Sigma Alpha Epsilon.....	2.56	-0.415
20. Sigma Alpha Epsilon....	2.975	*0.195	20. Lambda Chi Alpha	20. Delta Tau Delta.....	2.52	-0.48
21. Delta Tau Delta.....	2.90	*0.34	21. Alpha Tau Omega	21. Sigma Chi.....	2.24	-0.55
22. Theta Chi.....	2.83	*0.309	22. Delta Kappa Epsilon	22. Theta Delta Chi.....	2.22	-0.87
23. Sigma Chi.....	2.79	*0.43	23. Theta Chi	23. Phi Kappa Sigma.....	2.05	-1.11

*Decrease

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Atlanta Alumni Association of the M.I.T.

The annual banquet, election of officers, minstrel show, and dance of the Association was held on March 4, at the East Lake Country Club, Atlanta, Ga. This was the largest get-together for many years, demonstrating that the Southern members are alive to their Alma Mater. Hibbard S. Busby '14, the retiring President, officiated as toastmaster. Arthur K. Adams '13 was elected president for 1938, and Lawrie H. Turner '99 was reelected secretary.

Among those present were the following: Mr. and Mrs. Arthur K. Adams '13, Mr. and Mrs. Kenneth K. Ayers '26, Mr. and Mrs. Harry R. Bates '94, Mr. and Mrs. Hibbard S. Busby '14, Laurant deGiv'e '33, Mr. and Mrs. William E. Huger '22, Mr. and Mrs. Sidney B. Jewett '28, Lieutenant Commander and Mrs. Irving B. McDaniel '17, Harold C. McLaughlin '18, Mr. and Mrs. Thomas E. Moodie '24, Mr. and Mrs. Samuel H. Reynolds '22, Mr. and Mrs. Clarence B. Rogers '14, Mr. and Mrs. Walter J. Rountree '09, Mr. and Mrs. William J. Sayward '01, Charles A. Smith '99, Mr. and Mrs. Richard W. Smith '21, Mr. and Mrs. Percy H. Thomas '93, Mr. and Mrs. Lawrie H. Turner '99, Mr. and Mrs. Frank H. Moore, Jr., '34, William A. Boland '36. Guests included Mrs. Jack Crotsley of Chicago, Ill., and Miss G. W. Mindling of Atlanta. — LAWRIE H. TURNER '99, *Secretary*, The J. G. Dodson Laboratories, 611 Forest Avenue, Atlanta, Ga.

M.I.T. Club of Northern New Jersey

This must needs be another of those interim reports because the big banquet of April 7 will be appropriately considered in the June Review. Too, the induction of the new crop of club officers is in the offing (including this recorder, who yields his typewriter to an honorable successor). If, therefore, you are one of those unfortunates who missed the banquet of the seventh or the launching party on April 16, you'll have to button-hole one of the respective attenders for the story about those events and the new names or you may, in the words of the announcing gentleman, "see the next Review for further details."

Naturally suggested for present comment is the regional meeting for the territory contiguous to Red Bank, N.J., which was held, on schedule, March 16. Sixteen out of the 35 Alumni in the arbitrarily circumscribed area were present, aided and abetted by Vilett '22, Lutz '23, and Clarke '21 from the Club's officer

roster. John Hollywood '31 engineered this project and R. S. Bicknell '10 chose to be the perfect host for the party, which was held in a private dining room at the Buttonwood Manor in Matawan between 6:30 P.M. and 12 midnight, plus. Draw your own conclusions about it — what with good cheer, steak and fixin's, Institute movies and all. . . . As on previous similar occasions, there was complete informality, and several men closely associated in business or residential areas without realizing the existence of their M.I.T. common bond, gained a new interest in their fellows.

This and several embryo regional groups are encouraged by club officers simply because such action is proving, to a gratifying degree, a means of heightening the spirit within clusters of local members while it also redounds to the ultimate benefit of the main unit, centered in Newark. Also for the record, it is noted that the employment committee is digging into its difficult and worth-while problem in a manner that one day will produce desired results. The last meeting, attended by committeemen Straight, Fruit, and Brown, Institute Placement Officer Sage, President Vilett, and Al Glassett, President of our close-kindred New York club, was held but a few days prior to sending these notes on their way to Cambridge.

Further, we note that that windup Alumni Fund Drive proved something or other about the hidden qualities of the Northern New Jersey members, many of whom, pressed into unaccustomed service for our suddenly augmented checking committee, went into the game and batted out solid hits. All praise and thanks their way!

Well, about the time these pages are in your hands, the scholarship committee, under W. I. McNeill '17, will be holding its meetings to cull candidates for the Northern New Jersey regional and the freshmen competitive awards.

Final second Thursday luncheon of the season will be held at the Newark Athletic Club this month. — A. RAYMOND BROOKS '17, *Secretary*, Wayside, Brantwood, Short Hills, N.J. FREEMAN B. HUDSON '34, *Assistant Secretary*, Colgate-Palmolive-Peet Company, 105 Hudson Street, Jersey City, N.J.

Technology Club of New York

More than 100 persons were present at the evening entertainment at the Club on March 22. Walter C. Wood '17, sailing master at the Technology Sailing Pavilion and recently appointed housemaster of the Senior House at the Institute, presented a fascinating account of the now famous dinghy sailing activities on the Charles. Erwin Schell '12, who is credited with being one of the prime movers in the

introduction of the activity at the Institute, was also scheduled to speak but was unable to attend because of a bad cold.

With the aid of brilliant moving pictures in color, Mr. Wood traced the history of Technology's most popular activity from its inception to the present day. He pointed out that the majority of students who come out for the sport have never before sailed a boat and must be taught the art from the ground up. Nevertheless, the Institute is turning out some mighty fine sailors, as witnessed by the large number of intercollegiate meets in which Technology has taken first place. In addition to the dinghy movies, Mr. Wood presented several reels of Edgerton high-speed movies. These films never fail to evoke a large amount of interest and were well received by the audience. As a special treat, Mr. Wood showed some very exceptional shots of the recent Astor Cup and America's Cup races. Beer and pretzels were served during the meeting, which was one of the most successful of the season, and many persons went home with the wish that sailing might have been an activity when they were undergraduates.

An unusually timely meeting of the Club was held on February 8, when Tsune-chi Yu, New York consul general of the Republic of China, offered a highly illuminating talk on "The Chinese View of the Chinese Question." Dr. Yu made some pertinent observations on the Sino-Japanese conflict, and the audience followed the talk with a long question-and-discussion period.

The daily luncheons at the Club are becoming increasingly popular of late. Sandwiches and coffee are served every week day at nominal prices, and many Technology men who are in the area of the Club at noontime drop in to spend the lunch hour with their former classmates. This is an open invitation for any other Tech men who are in the proximity of the Club at the noon hour to join in the festivities. — ROBERT EMERY '34, *Secretary*, 22 East 38th Street, New York, N.Y. CONSTANTINE S. DADAKIS '34, *Review Secretary*, 644 Riverside Drive, New York, N.Y.

Washington Society of the M.I.T.

The regular monthly meeting of the Society took the form of a dinner at the Cosmos Club on Friday, March 18. Through the courtesy of the Chesapeake and Potomac Telephone Company, three interesting movies were shown under the titles of "Getting Together," "Voices in the Air," and "The Voice of the City." Many intriguing aspects of the telephone industry were emphasized. One interesting fact disclosed was that the telephone

conversations carried on in New York City during 24 hours, if converted into a single conversation, would extend over a 40-year period. J. M. Howard, commercial manager of the Chesapeake and Potomac Telephone Company, and R. W. Prince, chief engineer, were present at the meeting as guests.

C. P. Kerr '11, Acting President of the Society, presided as chairman. Announcements were made by Proctor L. Dougherty '97. — HENRY D. RANDALL, JR., '31, *Secretary*, 119 South Chelsea Lane, Bethesda, Md. LAURENCE W. CONANT '21, *Review Secretary*, 3008 Ordway Street, Northwest, Washington, D. C.

CLASS NOTES

1888

"Good old George Roper" — as his close friend, Joseph Newell, calls him — told your Secretary that he would give a real diamond to every '88 man who shows up at our 75th reunion in 1963, but what would a lot of old fossils, 95 years old, do with diamonds? We'll all be gone to Davy Jones's locker before that time. "A bird in the hand," our Grand Golden 50th Reunion in June, 1938, is worth a hundred diamond jubilees with real diamonds in 1963, when we will be unable to play golf, eat lobsters, go swimming in Massachusetts Bay, go motorboating, eat clams steamed by Charlie Faunce over a rock furnace built by '88 men, or sit in easy chairs filled with cushions, if you prefer, and talk over the good old times at M.I.T.

So if you are hesitating, decide to come, send in your post card at once, and join the happy throng. As indicated up to date (March 23), the following are coming, given in the order of their acceptance: Besler, Conner, Bird, Hamblet, Faxon, Merrell, Runkle, Ellis, Buttolph, Blodgett, Mead, Reynolds, Wood, Thompson, John Thomas Cavanagh (first time in 53 years), Edward M. Smith, Holman, Bates, Collins, Howard Gregory Hodgkins, Lee, Everitt Kilburn Taylor (first time), Theodore Albert Fogue (first time), Brown, President Webster, Fred R. Nichols (first time), Bridges, Towne, Furnace Builder Faunce, Stone — a total of 30 men. But this is only the beginning: Other outstanding '88 men from whom the Secretary has good reason to expect to receive acceptances in the very near future — in fact they are overdue — are Louie Ferguson, Harry Horn, Frank Adams, Donald M. Blair, N. I. Bowditch, Frank Cheney, Billy Dearborn, B. P. Flint, Eddie Fuller, Alex Jarecki, Frank Meade, Frank Moore (golf champion), Sammy Neiler, A. D. Nickerson, George Pool, Ivar Sjöström, and Arthur Williams. If all of these come, and I am sure there is no good reason why they shouldn't, we will break all records since the new Technology buildings were dedicated in 1916. Let's make it a record breaker.

It would seem that our engineers and architects are turning into poets at the tender age of 70 or slightly more, for the

Secretary has just received a poem from H. Gregory Hodgkins of Chicago, which we expect him to read at the class dinner directly after our poet laureate, John Griffin Faxon, delivers his "oration in verse." Now that the muse has started to work, let the good work go on, the more the merrier!

Sammy Neiler of Chicago is a very busy engineer and has been for half a century, but he wants to get away from business long enough to attend our 50th and renew his acquaintance with his classmates. He says he will wire at the last moment if he finds that he can come. This prompts the Secretary to state that there is a submarine cable to Chebeague Island, Maine, and that he will try to keep it in good operating condition around the first of June so that all wires will come through promptly and room reservations will be made as requested. However, we expect rooms for all to be assigned immediately on arrival, Friday noon, June 3. The place and name of the hotel where we are to celebrate was sent to all 91 classmates as soon as possible after the final committee meeting, which took place at the Union Club in Boston on April 18.

Adelbert F. Mead will be there as usual with his sergeant's chevrons on his freshman drill jacket. He says that he hopes the reunion will be easy and comfortable for us oldsters. We will try to make it so, for most of us have slowed down a bit during the last five years. — Merrell of Cincinnati has already picked his chauffeur for the trip from Boston to the shore. He is Conner, and he is the best in the business, although the ten other chauffeurs are just as good. ("Did I get out of that tight place all right?" as Charlie McCarthy would say.) — Fred Nichols and Norman Work should get together at the reunion, for they have a lot in common along the teaching line. — Joe Newell of Portland, Ore., says he is too busy to make it this time but would like to see Horn, Roper, Lee, Sjöström, Nickerson, and Vose. — George D. Moore, brigadier general in the United States Army, retired, sends greetings from the "Golden State of California." The Perkins' also seem to like California: D. H. has gone there recently, so can't be present at our 50th; A. J. has lived there for many years and can't come either. — Ellison Cooke Means, President of Means Realty Company, Ashland, Ky., spent last winter in Lakeland, Fla., as usual. — Sanford Thompson left for England on the S.S. *Manhattan*, March 23, to present a report on "Optimum Productivity in Industry" to the 38th Oxford Management Conference from the American branch and to participate in the meetings. He returned April 15 so as to be present at the important 50th reunion committee meeting in Boston on the 18th.

It is our sad duty to announce two deaths of which we have just learned: George C. Scales in Minneapolis, Minn., on March 7 and William A. Hall in the American Hospital, Paris, France, on March 14. We expect to have more details in the next issue of *The Review*.

Your Secretary returned from Norfolk, Va., to Chebeague Island, Maine, the middle of April after a very pleasant sojourn of seven months. He had some very enjoyable times with George Roper and Mrs. Roper and also became well acquainted with many of the hospitable people of Tidewater Virginia, as the entire Hampton Roads area is called. He learned the meaning of carpetbagger and scalawag and had the pleasure of being called a "Damn Yankee" by the 85-year-old widow of a Confederate general. He also learned all about the life of his uncle, Captain William Collins of the Confederate Mississippi Cavalry, who fought in 16 battles for the Southern cause during 1861 to 1865 and died in Mississippi in 1885 at the age of 51.

Some old philosopher once said: "Enjoy yourself while you are alive for you will be a long time dead." You can make your own application of this to our forthcoming 50th reunion celebration. — BERTRAND R. T. COLLINS, *Secretary*, Chebeague Island, Maine.

1890

During February we lost two of our internationally known members, Allen Rogers on the 14th, and George Hale on the 21st. Most of us recall Rogers during our first two years as a fellow of marked boyish energies, a characteristic easily comprehended after we learned that he entered Tech at the age of 15. His early work was in Idaho, with Phelps Dodge in Arizona, and with what is now the Anaconda in Montana. Following this he had an important part in the exploration, development, and equipment of several of the properties later owned by the American Smelting and Refining Company in Mexico. After 11 years south of the Rio Grande and a year as assistant general superintendent of the American Smelters Securities Company in New York, he opened his own office in that city as consulting engineer in 1906. Since 1917 this office has been continued by the firm of Rogers, Mayer and Ball. Rogers' advice covered many large operations in this hemisphere, from Alaska to Chile, and also in India and Australia. He made use of his broad, fundamental training, not only in advising as to large mining operations but in mill tests on such properties as Utah Copper and potash extraction experiments in Wyoming; as early as 1912, flotation tests made by him led to the adoption of this method in Butte. He was one of the first to recognize the possibilities of geophysical prospecting and contributed to its sane application.

Rogers had been a director of the American Institute of Mining and Metallurgical Engineers and president of the Mining and Metallurgical Society of America. He was chairman of a committee of the latter which made, in 1921, a very thorough study of the question of technical education. During the War he was a "dollar a year" man with the Bureau of Mines. A member of a number of clubs, he enjoyed a game of bridge and could tell a good story. An exceptionally clear thinker, he expressed his opinions

concisely and forcefully. Possessed of a New England conscience, his standard of ethics was high. He was the type of man that the country especially needs at this time.

The sad news of the death of George Ellery Hale on February 21 in Pasadena was received too late to be included in the class notes last month. With his passing, '90 has lost a beloved classmate and the Institute one of her most distinguished sons. No Technology graduate has ever received such international recognition for his work, as indicated by the number of honors and decorations conferred upon him by universities and scientific academies, the world over, and by foreign governments. Dr. Harlow Shapley of the Harvard Observatory has referred to him as the "greatest builder of American astronomy." An account of Hale's wide range of activities not only in his chosen field of astrophysics and astronomy but also in educational, scientific, and national affairs has been reviewed by Goodwin on page 277 of the April Review. It is therefore unnecessary to summarize his achievements here. George Hale will always hold a place of high honor among American men of science; he is, however, held in fond remembrance by his many friends not for his scientific achievements but for his inspiring, lovable personality which transcended all other gifts with which nature so rightly endowed him. He is survived by his wife, Mrs. Evelina Conklin Hale, whose devotion for nearly 50 years contributed much to his success; a son, William E. Hale of Pasadena; a daughter, Mrs. Paul A. Scherer (Margaret) of San Francisco; and eight grandchildren.

Another classmate, Frederick T. Fischer, who was with us only during our freshman year, died at Auckland, New Zealand, on March 2, while making a tour of the South Seas with his wife. He had been prominent in Seattle commercial life, having organized the Seattle Merchants' Association and the Seattle Credit Men's Association. He was a member of the Rainier Club, the Arctic Club, the Seattle Golf Club, and the Seattle Yacht Club.

Bertram Lenfest, who has returned from California, made a few inquiries about '90 members at the request of the Secretary. He reports Miss Bickford visiting in Honolulu, and nice calls on Moody in Los Angeles and on Martin Southworth in Chicago. The latter had been with the Fairbanks Morse Company but is now sole proprietor of the firm of H. Listenwaller and Company at 5626 Lake Park Avenue, Chicago, dealing in electric controlling devices. The sample pages of their "Switchboard Book," containing very detailed specifications and well illustrated with wiring plans, and so on, for standard switchboards, indicate that Southworth is still going strong.

Whitney is now a life member of the M.I.T. Corporation. — The Alumni Office reports the address of Cabot J. Morse changed to 276 Marlborough Street, Boston, and Harold B. Roberts to Caster Cottage, Seaside Heights, N.J. — GEORGE

A. PACKARD, *Secretary*, 50 Congress Street, Boston, Mass. HARRY M. GOODWIN, *Assistant Secretary*, Room 4-112, M.I.T. Cambridge, Mass.

1893

The Class will hold its 45th reunion on Saturday and Sunday, June 4 and 5. Plans are well under way and will undoubtedly be completed about as follows: The reunion will be a stag affair. We will have an early lunch somewhere in Boston or vicinity and drive to East Bay Lodge, Osterville, Mass., arriving early in the afternoon. Our headquarters will be in the so-called Annex, which is large enough to accommodate our party. The class dinner will be held Saturday night. Most of the men will probably return late Sunday afternoon, but any who wish may stay over Sunday night. There will be facilities for boating, bathing, fishing, golf, tennis, baseball, handball, and quoits. Full particulars will go out later, and the committee hopes to keep the expense to a figure which will be attractive to every member of the Class.

Our Class President, Frederick N. Dillon of Fitchburg, Mass., recently announced the engagement of his daughter, Mrs. Wallace Dohm Strack, to Louis Dejonge, son of Mrs. M. Emil Dejonge and the late Mr. Dejonge of Fitchburg. Mrs. Strack is a graduate of the Garland School, Boston, and attended Miss MacLean's School in Paris. Mr. Dejonge was graduated from Groton School in 1919 and from Harvard College in 1923. He is a member of the A.D. Club and the Hasty Pudding-Institute of 1770, Harvard Club of New York, Fay Club and Oak Hill Country Club of Fitchburg.

Cadwallader Washburn, artist and writer, who has made his home principally in the Canary Islands for the last few years, returned to this country some months ago and during the past winter has been at Lakewood, N.J. Meantime, he has exhibited his marine and other subjects from the Canary Islands at dealers' galleries in New York, Washington, and Boston. A native of Minneapolis, Minn., descendant of a prominent family there, Washburn received his B.A. Degree at Gallaudet College, Washington, D.C., in 1890, before joining our Class in the Architectural Course. His brief biography in "Who's Who in America" gives but scant intimation of his colorful career which has taken him all over the world and into many of its remote corners. After leaving Tech he studied art as a pupil of H. Siddons Mowbray and William M. Chase in New York, of Joaquin Sorolla at Madrid, Spain, and of Albert Besnard in France until 1900. He exhibited annually in a long series of brilliant Paris salons from 1896 to 1904 without intermission. Then came the Russo-Japanese War which he covered during 1904 and 1905 as war correspondent for the *Chicago Daily News*. His travels had taken him all over Europe to the Orient, across the Himalayas, and into the heart of Africa up to 1908, when he returned to this country and spent several winters in Mexico. It was in this period that the

Mexican Madero Revolution occurred, which again turned him into a war correspondent for the *Chicago Daily News*. In 1913 he escaped from Mexico when hunted by agents of President Huerta for publication of articles supporting the Madero cause. In subsequent years, he has continued his wanderings over the world. Twice he has been shipwrecked: first in 1910, by the sinking of the S.S. *Merida* in the Gulf of Mexico, when he lost all his baggage and was rescued in his pajamas; and in 1923, when he was marooned on a remote island of the Marquesas group, on account of a wrecked yacht, while making a collection of birds' eggs and nests for the Museum of Comparative Oölogy of Santa Barbara, Calif.

Some 30-odd years ago, Cadwallader Washburn's work in oil had become fairly well known. In 1903, however, he adopted etching as his medium. Through his plates he quickly gained international recognition, his work being shown not only from coast to coast in America but in leading art centers throughout the world. It received the acclaim of critics everywhere, both as to his mastery of the etched line and the effect of light he so ably expressed. On his return from the scientific expedition to the Marquesas Islands, he was awarded the degree of doctor of science from Gallaudet College in recognition of his work in science and in art. He is represented by his work in many of the world's leading galleries, including the British Museum and Victoria and Albert Museum in London; the Musée du Luxembourg, Paris; Ryks Museum, Amsterdam; and the Honolulu Academy of Arts. He was awarded a gold medal at the Panama Pacific International Exposition in 1915. While he calls Livermore Falls, Maine, his home, apparently Washburn is seldom there. He lists his permanent address as Minneapolis Trust Company, Minneapolis, Minn.

Dalton Parmly, from 1889 to 1892 a student of mining engineering with our Class, died at his home in Rumson, N.J., January 16. For several years after leaving the Institute, Parmly was engaged in the iron and steel business: first at Sharpsville, Pa., as chemist at Claire Furnace for one year and head chemist at Mabel Furnace for two years; then as chemist for the Illinois Steel Company for one year; later as chief chemist for the Wellston Iron and Steel Company at Wellston, Ohio, for three years, and superintendent of furnaces for one year. Parmly then returned to Oceanic, N.J., to look after his father's interests up to the time of the latter's death, after which he was engaged in the stock brokerage business in New York City for some time. Even then his hobby was farming on a 250-acre farm, running a dairy which supplied milk to a local creamery. He continued his interest in farming and engaged also in real estate business at Rumson where he was active in civic affairs. He married, in 1912, Miss Lillian E. Briggs. At some time after leaving the Institute he was a student at Rutgers College in New Brunswick, N.J., and took special courses at Cornell and Columbia Universities. — FREDERIC H.

Plan to attend Alumni Day at M.I.T. on June 6

1893 Continued

FAY, *Secretary*, 11 Beacon Street, Boston, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, 551 Tremont Street, Boston, Mass.

1894

My headliner for this batch of news is an item concerning a signal honor that has come to Herbert E. Hewitt of Peoria, Ill. Hewitt was one of that group of architects in '94 who have achieved distinction and have reflected great credit on their Alma Mater. He is now the senior partner of the firm Hewitt, Emerson and Gregg in Peoria, and the firm has designed many buildings of superior quality. Hewitt's latest distinction is that his new junior high school building, the Theodore Roosevelt Junior High School of Peoria, has been selected for a world-wide exhibit of architecture by the Royal Institute of British Architects, and the designs for this school are to be permanently on view in London. As if this were not sufficient distinction, the same building has recently been selected by a committee of the American Institute of Architects as one of 100 buildings, the plans of which are to form an exhibit to tour this country and Europe. Hewitt is so modest about his own performances that it never would have occurred to him to send this item to the Secretary. The Class is indebted to another architect, A. E. Zapf '95, for the information about this signal honor which has come to Hewitt; through the medium of *The Review*, the Class extends its warmest congratulations. Mr. Zapf also mentioned the fact that Fred Mann, who until his retirement was professor of architecture at Minnesota, called on him not long ago.

It is pleasing to record that Harry Gardner, Professor of Architectural Design at the Institute, is rapidly recovering from an operation of a few months ago and has returned to his work in the School of Architecture. His classmates on this side of the river look forward with pleasure to a closer association with Harry after the School moves into the new building which is now being constructed as the latest unit of the great group in Cambridge.

George Mower, who has been connected with the General Electric Company at Pittsfield practically continuously since leaving the Institute, has apparently now retired and is living at Amherst, N.H., a delightful old town, the birthplace of Horace Greeley and, incidentally, the seat of the summer home of our classmate, Norwin Bean, of the Manchester, N.H., National Bank. Although these two men never knew each other as students, it is probable that after nearly 50 years they will have occasion to get together in this interesting, rural community.

Luther Nash still maintains an important connection with the Stone and Webster Company in New York, although he has transferred his residence to 155 Main Street, Ridgefield, Conn., which was, if the Secretary's memory is good, the home town from which he came to the Institute as a freshman in 1890. This is not an ac-

tual retirement, for Luther writes that he spends two or three days a week in New York, but it is apparently one of those tapering off processes which might well be imitated by many more of us. The high quality of Nash's books on subjects in his professional field was commented on in these notes a year or two ago.

The latest news from Sterling Cousins is that he returned to California from Oregon about a year ago and is now living in Larkspur, Marin County. — Isaac Weil has been lost to the Secretary since the period immediately following the War, when he was located in Washington. Information obtained within the past three months now gives his address as 777 East Street, Walpole, Mass., and the Secretary hopes that he may have a call from him at some time in the near future.

It is with regret that we record the death, on July 11, of Mary B. Bullard, an architect who practiced in Portland, Maine, for many years. — James D. Littlefield, who for many years was a teacher of mechanic arts in the Cleveland Heights High School, died in March, 1937. The information of his decease was not received until late January of this year. Littlefield had been a frequent attendant at Technology meetings in Cleveland and had shared in the preparation of a great many boys from that district who have come to the Institute. His passing is noted with much regret.

It is surprising how latent talent in our classmates shows itself in these years when we might be expected to be going into a decline. This is the case with George Owen, famous as a yacht designer and professor of naval architecture and also famous as a sailor of racing yachts. For the last two or three years George has gained reputation as a Thespian and has taken parts in the plays given by the Drama Club at the Institute, an organization made up of staff members and graduate students and their wives. In the play "Black Coffee," recently given by the Club, George was a member of the cast, taking the part of an old family physician. The Secretary feels that he can shine somewhat by reflected light in these performances also, as his daughter had a rather prominent, although not a principal, part in the play and is secretary of the club. — SAMUEL C. PRESCOTT, *Secretary*, Room 10-405, M.I.T., Cambridge, Mass.

1895

Captain Hermann Kotzschmar, Jr., engineering officer for the Boston area of the United States Coast Guard, retired February 28, according to an announcement from Coast Guard headquarters. Kotzschmar joined the Boston unit of the Coast Guard in May, 1931, and has seen service in Seattle, Wash.; Portland, Maine; Key West, Fla.; and in Washington, D.C. He is now making his home in Portland, Maine. Joining the Coast Guard service shortly after his graduation, his first duties were with the old revenue cutter service in the Bering Sea patrol. During 1927, your Secretary and Mrs.

Yoder called on Kotchy in Seattle and enjoyed talking about the experiences he had in demonstrating the binomial theorem. We all wish to extend to him our best wishes for some years of blessed retirement.

For the last two months Mr. and Mrs. L. K. Yoder have been touring the state of Florida, which explains in part the omission of last month's notes. They enjoyed much the semireunion at Somerville, N.J., while visiting Arthur and Mrs. Canfield. Arthur had as reunion guests Al Drake and Willard Watkins with their families. We also enjoyed a visit of several days with Mrs. John H. Gregory of Baltimore, Md.

Much enthused by the experiences in Florida and completely tanned by its golden sunshine, your Secretary looks forward to enjoying a flood of letters from the '95 boys on his return to Ayer. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass. JOHN H. GARDINER, *Assistant Secretary*, Graybar Electric Company, 420 Lexington Avenue, New York, N. Y.

1896

Items are not very numerous this month, but this lack is balanced by the highly interesting material that is available. The first item is that felicitations are in order as a result of the announcement by Miss Isabelle Barnes and John A. Rockwell of their marriage on Monday, March 21, in Cambridge, Mass. Miss Barnes has long been associated with John as his nursing attendant in surgical and medical cases. They left immediately for a southern trip, which would include a stay with John's people in Tennessee. The recognition of Rockwell's long and loyal service to M.I.T. athletics made by the Alumni Advisory Council on Athletics, as reported last month, seems to have a broad significance to the Class of '96. This is evidenced by the good standing of the Class in its contributions to the Alumni Fund for recreational facilities. The percentage of classmates contributing has not yet reached a high point, but the number who have responded and who are responding day by day is encouraging, and the individual sums are averaging fairly well. This is as it should be, because Rockwell certainly merits the backing of his Class in this enterprise which is so close to him and so dear to him.

The second major item is that Con Young has written directly to the Secretary from Fort Myers, Fla., where he and Abby have spent the winter. They were due to start north by auto very shortly after the first of May and were to make various stops en route, so that they will arrive at their summer home on Cape Cod about the middle of May. Con explained his silence by saying that the winter had been quiet and restful with them, and there had not been very much to write about. He had had only two fishing excursions and no encounters with rattlesnakes. They had left Cape Cod last October for their usual journey to the South, with the expectation of making various stops en route with their friends, but

1896 Continued

when Bridgeport, Conn., was reached, a medical examination for Abby seemed to be in order, which was followed almost immediately by an operation for gall bladder and appendix. She made an excellent recovery, but this was one of the main reasons for the quiet winter, which gave her a splendid period of rest and convalescence in Florida.

A letter to the Secretary from Andy Green in Dominica, British West Indies, reports that he is still there as a hard-working, tropical planter, buried in the bush of a lovely island. He inclosed a photographic panorama of the interior of his house, which shows a most charming environment. Andy is hard working largely in theory, as he has an excellent manager who really does his work. He usually makes an annual trip to the United States or Europe, and was planning to come to the United States this summer. His headquarters for this trip will be Chicago, but he hopes to include Boston in his itinerary. If any classmate should ever be in the British West Indies, he should not fail to look up Andy on his plantation at Canefield in Dominica.

Classmates may have read in *The Review* that the refreshments at a meeting of the Alumni in Schenectady were provided by the Class of '96, which undoubtedly means that Walter Stearns had a leading part in this affair. — Hultman has sent the Secretary a copy of a rather voluminous report which bears the high-sounding title, "Special Report of the Metropolitan District Water Supply Commission and the Department of Public Health Relative to Improvements in Distribution and to Adequate Provision of Policy of Sources of Water Supply of the Metropolitan Water District of the Commonwealth of Massachusetts." Hultman, as chairman of the Metropolitan District Commission, was chairman of the special commission on the water supply problem, and the result is what one would naturally expect under his leadership, namely, a comprehensive and extensive report dealing with the problem in a real engineering fashion.

Just as the Secretary was dictating these notes, Dave Beaman popped in the office door for just a minute to say hello. He reported that personally he was fine, but that affairs in New Bedford were rather quiet. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M.I.T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

1899

W. S. Newell, President of the Bath Iron Works, comes to Washington frequently on navy work, and your Secretary happened to meet him at the Navy Department and had quite a pleasant chat. Newell seems to be in the pink of condition and is very busy on the work of Uncle Sam. — W. A. Kinsman came through Washington and called on your Secretary in March. He was on his way to Florida for a short vacation. He was in fine shape and enjoying life. — The Secretary greatly appreciates seeing anybody who comes to or through Washington. —

W. MALCOLM CORSE, *Secretary*, 1901 Wyoming Avenue, Northwest, Washington, D.C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

1901

The class data sheets and interesting personal letters which have been received from Henry Chambers (home address, 875 Park Avenue, New York City) during the last two years have indicated that although he is retired from active business, he continues to be very much engaged in a number of personal business and family matters. As previously mentioned in the class notes, he was so fortunate as to enjoy an extensive visit in Europe about a year and a half ago and since his return has sent me some philosophical comments which may be interestingly quoted as follows: "Since I have been to some extent master of my own time, I have found it very helpful to get as far away as possible from the atmosphere and influences of this sensitive city. One returns firm in his convictions that there are many people worse off than we are *yet* and with confidence in the sound judgment and right action of the American public when they know the complete story and understand where a course leads. Even a casual observer with very limited experience in traveling in foreign lands recognizes the many privileges generally enjoyed in this country, which he does not find elsewhere. There may be compensating factors which the traveler does not feel and appreciate as he enjoys the scenery and numberless points of interest in other lands, but, after all, reëntering New York Harbor gives one quite a thrill and feeling of contentment that this is his native land and *home*." — Undoubtedly, many more of us are mighty glad that we live in the U.S.A., notwithstanding the fact that all of us, all of the time, do not agree with what some authorities seem to believe should be done to make this country a better place in which to make our homes.

In the June, 1937, class notes reference was made to an interesting address on "Economic Trends in Manufacturing and Sales" which was delivered by William M. Vermilye before the Franklin Institute of the State of Pennsylvania. Vermilye, according to the class records, was then the treasurer of the Eitingon Schild Company at 224 West 30th Street, New York City, and either then or previously was executive vice-president of the National Aniline and Chemical Company. More recently a notice has been received from the Alumni Office to the effect that Bill has been honored by being appointed one of the vice-presidents of the National City Bank of New York, and I believe that the southern states is the part of the country in which he is especially interested in connection with the business of the bank. Bill is also a member of the American branch of the Newcomen Society of England, and at a recent textile history dinner of the society held at the Union League Club in New York he delivered a most interesting address, entitled, "Power in the Textile Industry."

This address has been printed for the Newcomen Society, and I was most delighted to receive a copy from the author. I wish it were possible to quote the whole address in these notes. It traced the development of the textile industry and the use of manual and other kinds of power in connection therewith from the earliest times, and I believe that any '01 man who is interested in the subject — as I imagine most of us are — may receive a copy of the address if he will write to our good friend Vermilye.

A very interesting letter has been recently received from Joe Evans regarding the actual development of big power and other P.W.A. projects out in Regional District Number 4, of which he is assistant regional director. Joe's new territory is much larger than the one he had formerly and now comprises the states of Montana, Wyoming, North and South Dakota, Nebraska, Missouri, Iowa, and Minnesota. He is therefore required to travel extensively and as of special interest he inclosed a copy of his schedule during 14 days of January, which required him to visit and make many stops throughout his whole territory. Joe made an interesting reference to this trip, from which we quote as follows: "I was traveling in North Dakota and northern Minnesota during the time the winter blizzards were at their height, and I can report I fully enjoyed the trip. The landscape looked very pretty under a blanket of snow and the many different kinds of spruce and pine trees were also covered with snow. I was driving a Ford V-8 automobile, and along the cuts in highways where the snow had drifted in I became stuck five different times, two times having to resort to shoveling out the car and the other three times I was fortunate enough to get a passing truck to come to my relief. During this period the temperature was between zero and 17 degrees below. I felt perfectly safe because of the fact that besides having full equipment in my automobile, such as skid chains, extra links, towing chain, pail of gravel, I also carried three extra gallons of gasoline, one gallon of kerosene with a kerosene lantern to be used in generating heat in case of an emergency, and for personal subsistence one can of corned beef, one of Underwood deviled ham, a package of saltine crackers, and two packages of sweet cookies, one quart thermos bottle of coffee, and one gallon thermos jug of drinking water."

Joe went on to say that the projects of the Public Works Administration with which he is connected in an executive capacity are most interesting and that in his opinion the P.W.A. has established a worth-while record which will long be praised. He also stated that the high-grade methods of operation which P.W.A. stands for have been constructive and educational to the nation at large. That statement coming from Joe means much, and we have an idea that wherever Tech men have been connected with such projects supervision has been most competent. As vice-president of the Class, he also stated that he would like to hear

Plan to attend Alumni Day at M.I.T. on June 6

1901 Continued

personally from more of the members of the Class. Joe's present address is 312 Farm Credit Building, Omaha, Neb., and I am sure he would most heartily welcome a visit from any members of the Class who happen to be traveling in his territory and will surely reply most interestingly to any letters which he may receive. He is already looking forward to the next reunion, and if we can't arrange for one before, we will certainly anticipate a good gathering three years from this June.

Charlie Tufts, who is vice-president of the Allied Chemical and Dye Corporation and whose business address is 61 Broadway, New York City, wrote rather briefly to make some favorable comments (which were appreciated) regarding the last class letter but did not make any comment about his own interests. Next time we hope he will be more liberal with some news for these notes. — Allen McDaniel, who is director of the Research Service with business address at 1427 I Street, Northwest, Washington, D.C., writes that the most interesting recent work for the water resources committee of the National Resources Committee was in connection with the drainage basin study for the President. He states that a number of Tech men are engaged in this important national program for the conservation, use, and control of our water resources. — Arch Klieves, who is officially retired, noted on his data sheet that, while he does not maintain an office, he is still giving considerable time to his profession of architecture. He gave his address as Post Office Box 232, Wheeling, W.Va. Harry Chalmers, who continues to make his home at Babylon, Long Island, but whose business address is 22 East 38th Street, New York City, sent your Secretary a unique Christmas card which must have been personally designed. The subject was a hippopotamus carrying a young cherub bearing a Christmas candle. It was a right Christmasy card and was much appreciated.

Ed Church, who is professor of mechanical engineering at the Polytechnic Institute of Brooklyn at 99 Livingston Street in that borough, writes that he recently met Bill Sweetser and Alec Ross at a meeting of the American Society of Mechanical Engineers. Sweetser, as was mentioned in the notes for the April Review, is professor of mechanical engineering at the University of Maine at Orono; Ross is dean of engineering at Clarkson College of Technology at Potsdam, N.Y. Your Secretary saw Church in New York last year and hopes to see Sweetser this summer, but Ross, who was of the same Course as Church and the writer — Naval Architecture and Marine Engineering — has been a stranger for many years. Nevertheless, we hope that we can all meet at the next reunion; in the meantime, we hope that these three gentlemen will send in some interesting news about themselves.

Bill Pepperell again writes from Greensboro, N.C., where he is director of the engineering and purchasing departments for the Burlington Mills Corporation. He

wrote very interestingly of the various maintenance problems which he has to solve and which must be extensive, for he advises that the Burlington Mills did a \$25,000,000 business in 1936 and about the same in 1937. Bill was located in New England for a number of years in connection with the Textile Machinery Authority and indicates that he misses his New England contacts. There is no reason why he should not arrange to renew friendships at the next reunion. He asked especially if any of his Northern friends happen to be in Greensboro or near by, that they certainly stop in and make him a visit. — Fred Connolly made no comments on his last data sheet, but from the address given we judge that his present business is Connolly's Reliable Drug Store at 1434 Dorchester Avenue, Boston, Mass.

The Alumni Office advises of recent changes of address as follows: Joseph E. Philbrick is now at 91 Warrington Street, Providence, R.I., and Edward H. Callahan is at 217 47th Street, Union City, N.J. As regards the Alumni Fund Campaign to provide new recreational buildings, your Secretary is glad to state that the Alumni Association advises that up to the time these notes are being written [March 23], 48 members of the Class had sent in subscriptions. Inasmuch, however, as there are 233 more men on the active list for the Class, we hope that many will be heard from. It will not be too late to send in a pledge on the date when this edition of *The Review* is received. Do not delay longer, therefore, but help to make the response from our Class as complete as possible, even if your contribution cannot be so generous as you might wish. — ROGER W. WIGHT, *Secretary*, Care of The Travelers Fire Insurance Company, 700 Main Street, Hartford, Conn. WILLARD W. DOW, *C.P.A., Assistant Secretary*, 20 Beacon Street, Boston, Mass.

1904

While the amount of news coming in regarding class affairs has not been of great volume, I have received one or two items which are of interest. From Professor Locke '96 comes the following: "Walter E. Hadley, who has been general superintendent of the Gary, Ind., works of the Carnegie-Illinois Steel Corporation since 1935, was recently appointed the manager of operations for his company."

Every once in a while I receive a bona fide letter from a member of the Class. This one is from Bill Evans: "I have been holding out on you for over a year in not having reported my transfer to Atlanta, Ga. I have been in Atlanta since January, 1937, representing the Aerofin Corporation. My reason for disclosing this awful truth at this time is the fact that I have been detected by one of our outstanding classmates. While driving through Palm Beach last week, Mrs. Evans and I stopped for a meal in a swanky (?) food supply. Suddenly I turned to Mrs. Evans and said: 'There's a fellow I bet was in my Class at M.I.T.' She said, 'Oh, no.' But I went over to this individual and asked him if he

would be offended if I made a mistake as to his identity. Currier Lang stood up and said, 'Well, where have I seen you before?' Well, I had to tell him how, when, and where. So my slipping away to Atlanta was bound to come to your attention. . . . Well, Lang and I had a most delightful day at Palm Beach. . . . My wife says the same thing, and I am confident that Currier and Mrs. Lang got some kick out of it. You see, the Langs are fortunate enough to take a midwinter vacation. They are spending a month away from business and look like they were enjoying the best at Palm Beach.

"As for myself, I am fortunate enough to have a job that swings me down to this territory several times a year, and once a year I make it look like a millionaire's vacation. Mrs. Evans comes with me, and we drive. We manage to put in the biggest part of a month in Florida. But seldom do we have an opportunity like we had with Currier and his wife at Palm Beach. The rest of my disclosure concerning my job is that I have been associated with the Carrier Corporation (air conditioning) since 1929. The Aerofin Corporation is a partly owned subsidiary of Carrier, furnishing lightweight heating and cooling coils to the air-conditioning trade in general. I pose as district manager for southern territory. Out of Atlanta I travel three-quarters of the time, from Memphis to Miami, and from the North Carolina line to New Orleans. It does not give me much chance for home life, so up to the present my family remains in Maplewood, N.J."

Gus Munster sent me a copy of a letter he received from Mrs. Sheafe, wife of C. Richards Sheafe, II. In these times of stress, struggle, and strife, it is most refreshing to read such a letter and I enjoyed it so much that I am passing it along to you: "Rich is a much better letter writer than I but doesn't get started quite so easily; so I am sending our greetings to tell you we were truly glad to get your letter and that we wish you were here right this minute to enjoy this grand spring morning."

"Last week we had some winter weather, general frosts and scattered freezes. Saturday forenoon when we went to town, fires and smudge pots were still smoking in the groves. Where they were not so protected, in several places, new growth and buds were nipped. But today I am sitting in front of an open window; birds are singing, and radishes, carrots, lettuce, and so on, are coming up in the garden down by the lake. Ours is a late garden. Just a few miles from here are acres of beans, peas, in fact all kinds of vegetables and strawberries, which we can get fresh every day. The citrus fruit is perfect now. We got a bushel of oranges and one of grapefruit, Saturday, both for 90 cents. We drink the juice by the quart. We have become regular Florida crackers — did not go north at all last summer. We have a four-room cabin just a few steps from the lake. From the door I can look across 15 miles of water to some of the highest hills in Florida, less than 350

feet, covered with row after row of fruit trees. The sunsets beyond those hills are beyond description. You wonder what we do besides hunt and fish? You'd be surprised how busy a person can be without any business. About the time Rich's father died, 1932 (his mother died two years before), we found ourselves debating whether to be transferred to Chicago by the U. S. Steel Corporation or, since we were free of the cares we had had for ten years or more, to break up our home and do some of the things we had planned and hoped to do 'sometime.' We chose the latter. We came to Florida the winter following, traveling all over the state, except the northwestern part, and quite by accident we found this real Paradise. The owners, Mr. and Mrs. Kultan, had lived only four miles from us all the time we were in Universal, and while we had never met, we had many friends in common. We soon found we had many other things in common, which have worked out to make a wonderful friendship.

"Last spring Mr. Kultan bought a cabin cruiser. All summer long he and Rich worked on it, remodeling the cabin. They have a shop down on the shore, have all sorts of tools and machinery — lathes, saws, planers, and what not, driven by a Delco — and no two men ever had a better time than they did. Mr. K. tuned up the engine, cut and set the glass in 50 (more or less) windows, and painted, while Rich did the woodwork, much of it from scrap lumber. We have had several day and moonlight cruises in it, but they plan to build bunks and equipment for longer trips for four or five people. From Lake Apopka there are waterways to Jacksonville and the ocean, and to Lake Ocheechee.

"What do I do? I read, write, sew, and just now I am knitting. That is what Mrs. K. and I did last summer while the men were in the shop. She has three complete outfits, and I am working on my second. We also made her sister a dress and several small pieces — vests, sweaters, and so on, for others. I go fishing and frogging with Rich quite regularly. We have our own small and very amateurish orchestra and bridge or euchre for evening entertainment. We rarely go to shows or leave the place, except for errands. A simple life, but we love it. We have company much of the time. Kultans' is ours, and ours is theirs. We all eat our evening meals together and often lunches. Believe it or not, time never drags. Come and see; the door is always open, and 'welcome' always on the mat."

The annual reunion of the Class will be held at East Bay Lodge, Osterville, Mass., on June 23, 24, and 25, and detailed notices will be sent out later, giving all particulars. — HENRY W. STEVENS, *Secretary*, 12 Garrison Street, Chestnut Hill, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, 4817 Woodway Lane, Northwest, Washington, D.C.

1905

Of prime importance this month is the informal notice of the 33d reunion of the Class, which will again take the form

of a week-end get-together at Boxwood Manor, Old Lyme, Conn., on June 3, 4, and 5. Those who have attended during the past three years will need no urging; those who have been able to plan ahead previously should by now be so aware of the good times missed that they will promptly send applications for bookings. Details will be mailed to each member of the Class at least a month in advance.

Editor in chief of "Technique 1905," namely, Grafton B. Perkins, V, comes to the aid of the Secretary with these welcome bits of news: "During the past dozen years my life has proceeded so uneventfully that I've rarely thought of myself as a source of class news. However, seeing in your column of February that there's a Grand Granddaughter Contest, I arise to inquire how about Grand Grandsons? I presume that men of our maturity have already produced plenty, so my first, born just before Christmas, can hope to win no prize. Said young gentleman is James Manderville Carlisle Junior, no less, son of a young Hartford lawyer of that name (minus Junior) and my No. 1 daughter, Deborah. When last heard from, Grandpaw and Grandmaw were doing well. My No. 1 son is sales manager of the plastics division, Gorham Company, Providence — also married. Son No. 2 and daughter No. 2 are still in school. To these vital statistics I add that we removed a year ago to the suburbs of Cambridge, taking an apartment in Boston.

"Having thus disposed of my own news, here's a bit about a man whom I'll bet you don't remember. Back in last July I was coming out of the R.K.O. Theatre here when I heard someone ask, 'Isn't this Clifton Perkins?' I explained the slight mistake in my first name and inquired, as tactfully as I could, who in blazes the speaker was. It developed that he was Hudson Jelliff. Some of us will remember him during the early part of our freshman year; I do especially, because he used to get on the train at Lynn and walk up from the North Station with the Salem crowd. Carl Graesser and Bill Motter will remember him, too, because of that episode in Tyler's office — but that's another story. Jelliff dropped out rather suddenly in the middle of the year. We never knew the cause, but Hudson says it was lungs, followed by a quick and complete recovery. He was graduated from Purdue in 1907 and spent the next 20 years with a construction company on jobs in Mexico, Java, and Cuba. Then he was hired by the Soviet government, doing some work at Dneproptrovsk and having some harrowing experiences in the Ukraine during the great 1932 famine. He lost one eye from an infected injury and came home to Lynn. He married shortly after his return and is now located in Camden. I urged him to write you about his interesting experiences, but I fear he never will, as his connection with the Class was too brief for him to feel one of us. But if any of the fellows ever get to Camden, they'd find it delightful to look Jelliff up, care of Arkmore, Inc."

Thanks, Grafton, for the news and also for the tip about granddaughters. If someone will donate a cup for the greatest collection of grandsons to go with bachelor Kriegsman's granddaughters loving cup, we will appoint a cup committee to gather vital statistics. Perkins, by the way, is the big sales promotional man for Lever Brothers, manufacturers of Lux, Lifebuoy, Spry, and so on. Anyone sending in a similar bunch of news copy is entitled to similar advertising space. A postscript on Perkins' letter leads us to a suspicion that he wasn't too sure of this man Jelliff's identity. We are asking our Camden correspondent to investigate and report.

Your Secretary has recently moved his office to 274 Franklin Street, Boston, which isn't of much news note until we explain the advantage of being across the street from Andy Fisher, who comes in daily with his Lincoln Library and interesting class news. Andy recently organized a "See Keith's Naval Museum" as a prologue to the annual spring athletic meet of several of the "better class" prep schools (including, of course, Andy's Roxbury Latin) held at the M.I.T. gym on Saturday, March 5. Said museum is the Ship Model Museum arranged by Henry H. W. Keith, XIII, now Head of Technology's Department of Naval Architecture and Marine Engineering. Prince Crowell, X, up from Franklin, Mass., spent several hours inspecting the Kendall collection of whaling ships, hoping to get pointers to help him win some Buzzards Bay races this summer. On leaving, he confided to Andy that the only thing he got out of the whole museum was an idea to sandpaper the front edge of his centerboard to a knife edge to cut down skin friction. Andy says if he is still class admiral next June, he will file the centerboard of the '05 dinghy, so as to beat all comers, which indication of superficiality should prompt other nominations for his job. If you don't like this last paragraph, we'll move the class office to some more distant part of Boston.

However, Andy is responsible for the news that the oldest son of Bob Folsom, X, is to graduate from Springfield College in June and is to enter the football coaching field. While we're on the subject of athletics, we are glad to record that Elmer Wiggins, Jr., Amherst '38, in addition to winning the prized Phi Beta Kappa key, has been end on the Amherst football team for three years, a member of the track team, and cocaptain of squash. Apparently he inherits proficiency in both studies and athletics from his dad, who, by the way, has been in the South much of the winter.

Ed Barrier, V, is traveling in the South on business (?). The question mark is inserted after talking with his secretary, who admitted that early March was a very convenient time for a southern business trip. — Harry Wentworth, VIII, has also been taking his winter vacation in southern climes. Clarence Gage, II, has been at St. Petersburg, Fla., all winter and reports business at his apartment quite flourishing.

Plan to attend Alumni Day at M.I.T. on June 6

Clarence, still loyal to his position as traveling secretary, reports calling on Waldso Turner in Detroit last summer: "He is no grayer than I am, and we can still laugh at the smooth pates. He has a nice electrical (wholesale and retail) business." Clarence tried to find Webster Taylor, branch manager of Columbia Broadcasting System, at 902 Fisher Building, Detroit, Mich., but apparently called at vacation time. Clarence found Wallace MacBriar at Milwaukee, still wearing that "contented" look. (Listen in on National Broadcasting Company's hookup at 10:00 P.M. every Monday night. — *Adv.*) Wallace's fourth son entered Rollins University last September. Clarence found Mitch Mackie high up in one of his twin office buildings — "Mitchell" and "Mackie." Thanks, Clarence. There are other vacancies open as traveling secretaries, with portfolio but without funds, the only requisite being the transmission of class news to the Secretary occasionally or oftener.

Class reciprocity is a great thing. Kenway reports doing patent work for Louis Killion. We can't let you in on Louis' new ideas because we don't know, but perhaps we can provoke him to tell us about them. We also have a patent (No. 2,100,786 if you want to see it) granted to Robert W. McLean, II, and covering some sort of gadget for a (cotton) gin. Bob is in Alabama at present. — Marcy has been making improvements to his summer home at Franklin, N.H., which brought the Secretary some business.

It is with regret that we announce the death of two classmates, Carl T. Humphrey, I, and William H. Keen, V. The following clipping is from a Philadelphia paper: "Dr. Carl Thomas Humphrey, dean of the Engineering School at Villanova College, died February 6 of pneumonia at his home here. A native of Weymouth, Mass., Dr. Humphrey was graduated from the Massachusetts Institute of Technology in 1905. After teaching here for two years he became an instructor at Villanova in 1908 and was made dean of the Engineering School in 1920. He taught mechanics and civil engineering. Villanova gave him the degree of Master of Science and in 1933, on his twenty-fifth anniversary at Villanova, he received the honorary degree of Doctor of Science from LaSalle College. Dr. Humphrey was a member of the American Society of Civil Engineers and was for many years a member of the church council of Tabernacle Lutheran Church, where he taught the men's Bible class. Surviving are his widow, a son, Richard A., a professor in the Episcopal Cathedral School at Garden City, L.I., and a sister, Mrs. Susan H. Waterhouse of Hull, Mass."

Definite news as to Keen's death is lacking, except that he died at Albany, N.Y., on February 24 after a lingering illness, the culmination of a paralytic shock which he suffered years ago. A letter from him the latter part of 1937 showed that he was cheerful and optimistic, hoping shortly to return to his birthplace at Malden, Mass. Your Secre-

tary's recollection of Bill at Tech is that he was a grand pal and a dandy little basketball player. Memory recalls the fact that '05 was well represented on the varsity around 1903 to 1905, namely Wiggins, Webster, Keen, Bartlett, Schonthal, and your Secretary.

Changes of address, which come to the Secretary from various sources, always arouse the suspicion that said changes imply information which could be interesting to classmates. However, letters written to inquire and to induce an explanation with personal news seldom produce results. Perhaps our loyal news gatherers can dig out something by personal solicitation. The new addresses are James S. Brown, II, 104 Woodbury Street, Providence, R.I.; Herman Eisele, XIII, 817 Engineers Building, Cleveland, Ohio; Henry H. Fleisher, I, 2301 Green Street, Philadelphia, Pa.; Edward C. Grant, XIII, 925 Whitmore Street, Detroit, Mich.; Isadore Niditch, V, 5 West 91st Street, New York City; Edward D. Perry, XIII, 45 Montrose Street, East Greenwich, R.I.; Albert H. Smith, XIII, 7231 South Prairie Street, Chicago, Ill.; F. Chas. Starr, I, Cosmos Club, Washington, D.C. — FRED W. GOLDTHWAIT, Secretary, 274 Franklin Street, Boston, Mass. SIDNEY T. STRICKLAND, Assistant Secretary, 75 State Street, Boston, Mass.

1906

Thanks are due to Bill Furer for a copy of the weekly bulletin of the Engineering Association of Hawaii, of which Bill is the secretary. The portion of the bulletin of particular interest to 1906 men is as follows: "Last week's meeting (January 28) was a double-header as regards speakers. The first of these was Capt. John J. Thomas, District Superintendent of the American Can Company, San Francisco. Captain Thomas being an M.I.T. graduate, '07, II, the occasion was used to invite all former students of M.I.T. to meet with us. Out of a total of some 60, many of whom are in the naval and military service, eleven answered the M.I.T. roll call. Included were Commander Ernest L. Patch ['10], Construction Corps, U.S.N., and his brother 'Dan' ['02], the latter having arrived that very morning from the mainland. An older brother, Ralph, was a classmate of the Secretary's, Class of 1906. It is thus his pleasure to know three Patches. Ernest has a stepson, Bill Hatch, fine fellow, and two boys of his own. His wife is a live wire and this 'Hatch-Patch family' is one of the most interesting and one of the finest to be found in any land!" — Speaking of Hawaii, the Secretary acknowledges a Hula girl post card from Honolulu sent by Ray Philbrick. The card advised that Ray and his family had been spending a very enjoyable vacation at that spot. It also referred to the hospitality of the Hawaiians, with special reference to Sid Carr and Bill Furer. We shall look forward to a more complete account of Ray's vacation on his next visit to Boston.

Under the date of February 7, Charlie Wetterer wrote as follows: "While en route from St. Louis to New York yester-

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day I had the pleasure of talking with J. H. Feemster. He is located in Tulsa and is in the business of supplying equipment to the oil companies and constructing gasoline extraction plants. He has a son at Dartmouth."

Sherman Chase telephoned the Secretary on March 1 that he had heard of the death of Robert Howe, funeral services having been held at Marlboro, Mass., on Saturday, February 26. Your Secretary has a distinct recollection of Bob Howe while at the Institute as a member of Course VI. Some of the classmates will recall him as a good track man, specializing in the middle distances. He was a member of the relay team that ran against Dartmouth at the Boston Athletic Association meet in 1905 and, if I remember correctly, he won the 440 at the New England Intercollegiates that spring. He left the Institute before graduation and went in business with his father at Marlboro. At the time of his death he was operating the Marlboro Transportation Company. Howe had taken no interest in Tech affairs since his undergraduate days, and the Secretary regrets he is unable to give a better account of his career. — JAMES W. KIDDER, Secretary, Room 802, 50 Oliver Street, Boston, Mass. EDWARD B. ROWE, Assistant Secretary, 11 Cushing Road, Wellesley Hills, Mass.

1907

All members of the Class are entitled to know the condition of our class treasury. So we publish two statements prepared by Harold Wonson, our Class Treasurer.

1907 M.I.T. Treasurer's Statement

March 30, 1937

Receipts

Balance October 22, 1936.....	\$ 5.50
Class dues collected October 22, 1936, to March 30, 1937.....	318.70
Total.....	\$324.20

Expenditures

Post cards and printing first dues notice.....	\$ 4.90
Unique Press notices January 12, 1937, '37 Class Dinner....	5.20
Post cards and printing second dues notice.....	4.30
H. B. Hastings, expenses, class dinner January 12, 1937	6.30
Postage on first notices, 30th Reunion.....	7.32
Unique Press, printing first notices, 30th Reunion.....	5.75
M.I.T., new 1907 card catalogue	3.64
Unique Press, 500 envelopes, reunion publicity.....	3.00
Printing and envelopes, third dues notices.....	12.63

Total.....	\$53.04
Balance (Whitman National Bank) March 30, 1937.....	\$271.16

1907 M.I.T. Treasurer's Statement

March 2, 1938

Receipts

Balance (Whitman National Bank) March 30, 1937.....	\$271.16
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1907 Continued

Class dues collected, additional Reunion receipts, as reported June 10, 1937.....	\$ 32.00
Profit on class dinner January, 1938.....	905.00
	1.40

Total..... \$1,209.56

Expenditures

Unique Press reunion notices April 14, 1937.....	\$ 21.25
Postage on reunion notices April 14.....	14.04
M.I.T. additional work on card catalogue April 27.....	1.10
Typing class notes and class lists May 11.....	6.00
Collection charges, C. D. Howe's dues check May 11.....	.25
Bryant Nichols, reunion expenses June 1.....	1.95
Oyster Harbors Club, reunion June 7.....	826.25
Class picture June 7.....	1.00
Bryant Nichols, postage June 22.....	2.50
Bryant Nichols, expense Alumni Fund meeting September 30.....	1.40
1,000 envelopes, Class Secretary October 25.....	5.25
Typing class notes, four months December 27.....	5.50
H. B. Hastings refund January 10, 1938.....	10.00
Reply cards, January class dinner January 27.....	5.20
Secretary's expenses, December and January, February 7.....	2.30

Total..... \$904.00

Balance (Whitman National Bank) March 2, 1938..... \$305.56

You will note that Harold did a fine piece of work, by persistent effort, in collecting a substantial amount of class dues, a total of \$350.70 being secured between October 22, 1936, and March 2, 1938. The result is that our treasury is in fine condition, and we shall undoubtedly have enough money to take care of all class expenditures until the time of our 1942 reunion. This \$350.70 was contributed by 105 men of the Class, which is 43.2 per cent of our mailing list of 243, comprising the group to whom requests for dues were sent. Each man was asked to pay \$3.00, but some sent in more than that amount, which accounts for the fact that the total received was \$350.70 rather than \$315.

It is a curious coincidence but an actual fact, "believe it or not," that exactly 105 men of our Class are also paid members of the Technology Alumni Association for 1937-1938. This includes eleven who are life members of the Association. The list of the 105 Association members is not exactly identical with the roster of those who paid class dues, but, as would be expected, the names do correspond to a very large degree.

A total of 372 men are considered as '07 men by the Alumni Office, so that the 105 Association members represent 28.2 per cent of the Class. It is interesting to note that for Classes near ours in point of time, 1904 has 26.2 per cent of its membership

in the Alumni Association; 1905 has 33.4 per cent; 1906, 27.9 per cent; 1908, 28.4 per cent; 1909, 26.2 per cent; 1910, 25.3 per cent; and 1911, 32.5 per cent.

A telephone conversation with Leon Allen, I, in March revealed the fact that he continues to be town accountant for the town of Brookline, near Boston, a position that he has held since 1923. He has a 22-year-old son who works for a wool concern in Boston and an older daughter who is a nurse. — Charles E. Baker, XI, has been superintendent of the Trimount Dredging Corporation of Boston since 1926. Ever since 1907 he has been directing dredging operations, being connected with four different firms. His home is at 35 Stratford Road, Melrose, Mass., and he has three sons and two daughters, the older daughter being married, with a daughter of her own. — One of the loyal stand-bys of '07 is Clinton C. Barker. A quiet, but very genuine fellow, Clinton can always be counted to support Technology class projects by both financial assistance and personal presence. Ever since 1909 he has been connected with the engineering department of the county of Essex in Massachusetts, and he is now assistant county engineer, with an office at the Court House in Salem, Mass. He is married but has no children, and his home is at 33 Crosman Avenue, Beach Bluff, Mass.

A personal call at Room 2-348 at the Institute resulted in a brief chat with Charles M. Curl; brief because he was directing the work of a group of students bent over their drawing boards, grappling with the intricacies of descriptive geometry, in which subject Curl has been an instructor at Tech since 1920. He received his degree in naval architecture. Unlike many of us, he takes no interest in social contacts or in class or Institute affairs but is much devoted to his wife and his 27-year-old daughter, who works in the advertising department of Dewey and Almy Chemical Company of Cambridge, Mass. The family home is at 15 Orient Place, Melrose, Mass. — Leverett H. Cutten, regarding whose work and hobbies we wrote in the November Review, has a son in the Class of 1939 at the Institute, who plans to continue work there for a doctor's degree. — We met Eugene V. Potter on the street in Boston one day in March. Gene looked fine in every way. From 1916 until about 1934 he was manager for W. M. Evatt Company, a construction and contracting firm in Boston, but circumstances ended that connection, and he is now doing considerable appraisal work in fire losses of all kinds, is building commissioner for the town of Hingham, Mass., where he lives, and is "mixed up," to use his own expression, in Hingham banking associations. He is married and has one 27-year-old son.

The older son of Gilbert Small expects to be graduated from Dartmouth in June and has made arrangements to return to that college to teach for a year and then to take postgraduate work in organic chemistry at Harvard, where it has been

determined that he can secure the best possible training in the particular branch of the subject that he wants to follow. Gilbert's younger son will be graduated from New York Military Academy this coming June. Gilbert himself, a partner in the firm of J. R. Worcester and Company, Boston, consulting engineers, is a recognized authority on building foundations. He is chairman of a commission on a new Boston building code and, with several other eminent engineers, has been making exhaustive studies and reports on the peculiar foundation problems in Boston, where there is so much made land. — BRYANT NICHOLS, *Secretary*, 126 Charles Street, Auburndale, Mass. HAROLD S. WONSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

1908

Next month we celebrate our 30th reunion. George Glover, general chairman, says it looks like a big time with the largest turnout we have ever had. As you know, reunion will be at Oyster Harbors Club, Osterville, Mass., on the Cape, where we had such a good time in 1933. We plan to arrive at the club Friday afternoon, June 3, and there will be something doing until Sunday afternoon, June 5, when we adjourn to Boston for the big all-Technology reunion on Monday, June 6. Make your plans right away to be with '08 at Oyster Harbors next month, and let George Glover know when you will arrive.

We had an enthusiastic dinner at Walker Memorial on March 24, with the following men present: Frank Towle, Lang Coffin, Joe Wattles, Steve Lyons, H. P. Gurney, Ted Joy, Fred Cole, Matt Porosky, W. B. Hunter, Linc Mayo, Winch Heath, Toot Ellis, Myron Davis, George Belcher, Cookie, Bill Booth, and Nick Carter. Quite a few of the fellows who were out of town sent word that, while they were sorry to miss the dinner, they would be with us at Oyster Harbors. Ways and means and general plans for the reunion were discussed.

Some of the fellows located in New York City have been getting together for lunch about once a month this past winter. The lunches have been well attended and provided an opportunity for renewing friendship and discussing plans for the 30th. Gregory Dexter has been arranging these lunches, and I should like to extend to him a vote of thanks from the Class for the good work.

Harry P. Sweeny has been connected with the Weintraub productivity survey for over a year. He has been preparing an intrastaff memorandum on power drilling to serve as a standard for the various senior engineers; and this eventually expanded, so that by last summer it included a rather complete history of the evolution of power drilling in the United States. Subsequently Sweeny was appointed technical advisor to the consumers' council of the National Bituminous Coal Commission. This consumers' council is separate from the commission and has the duty of representing the

Plan to attend Alumni Day at M.I.T. on June 6

1908 Continued

interests of the consuming public. Sweeny and his family are living in Washington, with the exception of his two sons who are, respectively, a sophomore at Colgate and a plebe at Annapolis.

The wedding of Harold S. Osborne of Upper Montclair, N.J., and Miss Dorothy Brockway, headmistress of the Spence School in New York City, took place on March 24 in the chapel of the Church of the Heavenly Rest, New York City. They sailed shortly afterwards for a wedding trip to Bermuda. Mrs. Osborne, who is an alumna of Barnard, will continue her work at the school. Osborne has, for a number of years, been transmission engineer of the American Telephone and Telegraph Company and is also chairman of the town planning board of Montclair. His first wife, the former Mary Agnes Wilson, whom he married in 1918, died about five years ago. He has two daughters by his former marriage — the Misses Margaret and Mary Agnes Osborne. — Mr. and Mrs. Everett Jeffs Beede of Belmont, Mass., have announced the engagement of their daughter, Miss Deborah Southworth Beede, to Frank Lincoln Phillips '36 of Springfield, N.J.

We report with regret the death of Arthur C. Merrill, which occurred on January 12. He leaves his wife and three children. He was associated with the office of Truman Hayes and Company, insurance brokers in Boston, from 1927 to 1935, and intermittently from 1935 until his death. His previous connections in business included positions as district sales manager for the Elliott Fisher Company; district sales manager for the Harrison Radiator people in Boston; three years as a lecturer for the Vacuum Oil Company, traveling about the country. Prior to this he taught for a while at the University of Pennsylvania.

The Class will be interested in the following note from Gregory Dexter: "I had an addition to my family in the form of a baby girl, Nancy Lee, on February 19. A boy was born in September, 1935. So now I have two. Guess they are the youngest babies in the Class (not grandchildren)."

We have the following changes of address to report: Mortimer P. Burroughs, 700 South Price Road, Clayton, Mo.; Ferdinand J. Friedman, McDougall and Friedman, 1221 Osborne Street, Montreal, Province of Quebec, Canada; Paul H. Heimer, Public Buildings Branch, Treasury Department, Washington, D.C.; Carl E. Hollender, Federal Power Commission, Old Post Office Building, New York, N.Y.; Charles L. Lufkin, 3050 Van Alstyne Boulevard, Wyandotte, Mich.; Hal M. Radford, 1332 Shattuck Avenue, Berkeley, Calif.; Dr. Max Rohde, 30 East 76th Street, New York, N.Y.; Howard Torrey, 247 Summer Avenue, Reading, Mass. — H. LESTON CARTER, *Secretary*, 185 Franklin Street, Boston, Mass.

1909

On March 12 the Secretary spent a very pleasant afternoon with 14 of the New York members of the Class, the affair being the annual spring luncheon meet-

ing, held at the Technology club. It was good to see so many of the boys, some of whom I have not seen for many years and others not since our 25th reunion. The fall and spring luncheons which Paul Wiswall sponsors are a real tradition with the Class, and the Secretary felt quite honored to be invited as the guest of the day.

Most important of matters discussed were preliminary arrangements for the 30th reunion a year from the coming June. Having previously discussed, with some of the men in Boston, the location for holding the reunion, I can report that it seems to be the unanimous opinion that we go to the Oyster Harbors Club, Osterville, Mass., on Cape Cod, where we had such a pleasant time four years ago. Accordingly reservations have already been made for June 3 to 5, 1939, at that place. The thought is now that we assemble there for lunch on Saturday, staying over until the following Monday morning, leaving in time to attend M.I.T. Alumni Day in Cambridge on the sixth.

Delos Haynes, who hails from St. Louis, was at the luncheon and spoke of seeing Altamirano, who is now in the Mexican Diplomatic Service and spends his time visiting various South American countries. He can be reached through the Department of State, Mexico City. — John Hatton said that not long ago Jack Elbert's son had called on him. John Elbert is a fine young man who was graduated from the medical school of the University of Glasgow, Scotland, and upon his return to Scotland is to be an intern, specializing in obstetrics. His sister, Margaret, is now a medical student at the University of Glasgow. Jack's widow is living at Rothsay, Scotland. — George Reppert's son is a student at Princeton.

J. Newell Stephenson has sent to me an account of his 12,000-mile automobile trip last fall through the South, visiting pulp and paper mills in that part of the country. In addition to visiting the mills and timberland, stops were made at various points of interest. In concluding, Steve says: "One inference that may be drawn from our trip is that newsprint developments in the southern states would have to be carried out to the detriment of existing kraft mills. As power must be raised by steam, and as water is scarce, it is a question if present newsprint prices will tempt large capital investment in the southern states."

The March 21 issue of *Barron's*, the national financial weekly, contains an interesting article by Ed Howe on "Investing \$100,000 for a Widow." In 1925, *Barron's* conducted a contest on how best to invest \$100,000 for a widow under conditions prevailing at that time. Of the 1,100 entries, prizes were awarded to three, five received honorable mention, and six others were selected as worthy of publication. Ed's list was one of the group of six.

In the issue referred to above, Howe compares the market value and the income of his list with the three prize winners and with one another. It is in-

teresting to note that in the editorial column, *Barron's* goes on to say that "other lists did better as to income in the boom, but none did quite so well in the ensuing slump, nor recovered quite so far last year. Accordingly when subscribers began to ask how to invest the widow's \$100,000 under present day conditions, Mr. Howe was invited to answer." The current issue contains his new list for 1938.

"Encouraging to every investor who feels that in the last analysis his success or failure must depend on his own judgment is Mr. Howe's explanation of his ability to pick the right investments in 1925: 'When I went to South America on an extended engineering job, my uncle sent me the *Boston News Bureau*. Through that I became acquainted with *Barron's* at its very beginning. It happened that at the time *Barron's* announced its contest for Investing \$100,000 for a Widow, I was on an extended engineering job at Panuco, Ver., Mexico, which is the center of one of Mexico's oil districts. With evenings to spend by myself and with a dislike for the usual method of spending an evening there (in a bar-room), I occupied myself with preparing a paper to enter in *Barron's* contest."

"I had never subscribed to any Investment Service. Panuco does not boast of a public library, nor any other library that was available to me, for that matter. The only financial information I could lay my hands on was in one copy of a current *Boston Herald*, one copy of a *New York Times*, and a paper covered booklet called *The Investor's Pocket Manual*, that was several months old. Thus I sat evening after evening in my dingy hotel room, draped about with mosquito netting to keep the hordes of mosquitoes out, and studied and restudied my meager data. Finally, it was assembled into a proposed conservative investment portfolio, with an accompanying descriptive article, which needed only typing when I returned to Mexico City. The work that carried me to Mexico and to several other foreign countries was for Westinghouse Electric & Manufacturing Co. Now I am with the Consolidated Edison Co. of New York doing engineering and accounting work. Each Monday I look forward to a new *Barron's*. It would be interesting to know how many investors have done better with \$100,000 since 1925, with or without management, than the 'widow' for whom Mr. Howe's list was prepared!"

"The reader should not assume from the publication of Mr. Howe's article that *Barron's* endorses the idea of buying any list of securities and putting them away and forgetting them. What Mr. Howe has demonstrated is that for the long pull superlatively good selection of individual stocks will go far to offset the handicap of ignoring swings of the business cycle. The new list is presented merely as a matter of interest. The odds are against its meeting the unknown conditions of the next 13 years as successfully as the old list came through the 1925-38 trials. But the average investor may take some hope from the fact that even

1909 Continued

one of his kind was able to do as well as Mr. Howe did without any reference to what was happening subsequent to 1925. Given the same careful attention to the selection of the original list *plus* intelligent reading of the news, it is not too much for the individual investor to hope that over the next 13 years he may materially better even Mr. Howe's record." — Howe writes me that he met H. C. Colson recently at the Technology club, and that Colson is engrossed in his Newark job and getting very stout! — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. *Assistant Secretaries*: PAUL M. WISWALL, MAURICE R. SCHARFF, New York; GEORGE E. WALLIS, Chicago.

1910

During the past few months, notices from the members of the Class have been lacking. Your Secretary does not know whether this is due to heavy business or to the advent of spring. Your Secretary met three classmates during the past month: Bob Burnett, who is located in Fall River, attended a meeting of the Alumni Council at which pictures of yachting were shown. Bob is extremely interested in sailing and said that he would not have missed it under any circumstances. As your Secretary was at the same meeting, he can vouch that these pictures are worth seeing, whether you are interested in yachting or not. Bob has a son, a sophomore at Harvard, who is as interested in sailing as his father.

Orrin J. Crommett is still in the insurance business and seems to be keeping fairly busy. O. J. has grown a little stouter — yet he possesses that very pleasing smile which none of us can ever forget. — About a month ago, your Secretary met Carl Sittinger, who is with Stone and Webster. Carl lives in Winchester and seems to be happy and well satisfied. — HERBERT S. CLEVERDON, *Secretary*, 46 Cornhill, Boston, Mass.

1911

Maintaining the same rate of approximately \$80 per contribution, our Class has just passed the \$5,000 mark in pledges to the current Alumni Fund as spring enters its third day. Sixty-three of us, or almost exactly one-sixth of the living members for whom we have good addresses, have pledged \$5,065. And speaking of spring, you can't imagine any grander days than these first three here in the good old Bay State. When these notes appear Daylight Saving will have just entered and it will be but six weeks to Alumni Day, set this year for Monday, June 6. Everyone who possibly can is urged to attend this year, for it marks the farewell to dear old Rogers Building, where we, as frosh, matriculated in the fall of 1907.

Classmates will be proud to learn that young Al Wilson, son of our Al Wilson, I, and a candidate for an S.B. Degree this June in the civil engineering option of the Business and Engineering Administration Course, has been elected to Tau Beta Pi, senior honorary scholastic fraternity. He is also leader of the Glee Club

this year and was recently elected to membership on this year's Senior Week Committee. His dad, we're glad to report, is much improved after a nervous illness of some duration.

I was talking with Hal Robinson, I, here the other day, just after he and his wife had returned from what has now come to be their annual midwinter vacation, and I learned that he has taken his son, Henry, a graduate of Norwich University in 1936, into partnership, and the firm is now H. L. and H. C. Robinson, engineers, 22 Elm Street, Worcester, Mass. This year he and his wife traveled 4,000 miles on a vacation trip to Florida, spending much of their time in Miami.

Another Worcester item reveals that Fred Daniels, VI, and his wife sailed on March 26 for a six weeks' trip to England, France, and Italy. While in Paris they will visit their daughter, Eleanor, who is at the Sorbonne with a Smith College study group this semester. Fred, you know, is president of the Riley Stoker Corporation here and a member of the board of trustees at Worcester Academy, where he prepped, and at Worcester Polytechnic Institute.

We learn from our grapevine that Pete White, II, Babcock and Wilcox veteran and recent Metropolitan contributor to the Alumni Fund, is beginning work on a doctor's degree by taking a course under Dr. Kimbark '33, formerly on the M.I.T. electrical engineering faculty, at Brooklyn Polytechnic Institute. He has recently been doing work in connection with the network analyzer at the Schenectady plant of General Electric, and also a study of an analyzer at the Westinghouse plant at Pittsburgh.

Bart Nealey, I, and Bob Morse, VI, are other Metropolitan contributors of recent date. Jim Campbell, I, by the way, has been doing a grand bit of follow-up work down there in the big town. Marc Grossmann, III, the original 1911 aurora borealis kid, generously contributed from the Windy City, while Art Rooney, VI, of the Youngstown Sheet and Tube Company and Carl Richmond, I, now of Buffalo were both on the recent list. From Washington, Phil Kerr, II, came through, while Wes Jones, II, sent in from New Haven a generous addition to his original pledge. Completing our list of nine new contributors during March are two Bostonians: Chet Pepper, II, field secretary of Burdett College, and George Sullivan, X, of the Independent Coal Tar Company.

Now, boys, let's at least double these figures from 1911. Also let's "write to Dennie" and last, but not least, remember Alumni Day, Monday, June 6. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Worcester, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1913

One of the most ardent celebrators at our 10th reunion, at Wellfleet, on the Cape, was one Dave Nason, XIV. At that time Dave was in the leather business in Salem, Mass. Now he pops up in Milwaukee. Read of his thirst for our 25th reunion: "Your liberty with my name to

help ballyhoo a reunion . . . is neither pardoned nor condemned. After all, you had to fill your column, and small minds cannot be choosy. . . .

"Finally, and a little more seriously, I think the party ought to be ballyhooed a bit. It's no effort for a Bostonian to drive to Cambridge or Salem, but it is quite another matter to stir up enthusiasm among those 200 miles or more away. Furthermore, you get no kick out of bending elbows with the same home crowd. Your object should be to bring old friends back; the more you bring back, the greater the pleasure. I cannot be sure I can come, but like all the others, I want to be there. By keeping all of us stirred up from now until the middle of May, you should insure a fair turnout of unfamiliar faces and portly waistlines. Give my greetings to that worthless bunch of ruffians who comprise your steering committee. There ain't a helmsman in the lot measured by ancient standards of drinking."

Remember the Field Day pep meetings? One of the same sort took place on Saturday, April 2, at the University Club in Boston, in anticipation of our celebration in June. For details read the June Review or, better, let me tell you about it on Saturday, June 4, at the Commander Hotel in Cambridge. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 784, Pawtucket, R.I.

1914

Here we are finishing up another winter and Alumni Day is just ahead. We will have a room at the Hotel Statler for a meeting about an hour before the big dinner starts. Plan to attend Alumni Day and to attend this '14 meeting, when we will discuss plans for our 25-year reunion — just a year from now.

Not to be outdone by O. C. Hall in local dramatic activities, Dick Favorite appeared as a soloist in a musical variety show produced by the Waban, Mass., Woman's Club on March 18 and 19. Undoubtedly there are many other classmates taking part in local activities that would be of interest to us all. Why not write your Secretary about them? — On February 24, under the leadership of Boggs Morrison, DesGrange, Gazarian, Wilkins, Favorite, and your Secretary met at the University Club in Boston for dinner to discuss Alumni Fund Campaign plans for the Boston district. After a successful dinner the group joined a larger meeting representing all of the Classes, to hear details of the drive.

Howard Borden, who since graduation has spent considerable of his time in the management of state institutions, is now engaged in the supervision of a W.P.A. project which is making a wide study of parole records. — Word has just reached us of the death in Shanghai, China, on September 23, 1936, of George B. Ott, Jr., who for many years has been associated there with the Standard Oil Company. No further details are available. — H. B. RICHMOND, *Secretary*, General Radio Company, 30 State Street, Cambridge, Mass. CHARLES P. FISKE, *Assistant Secretary*, 1775 Broadway, New York, N.Y.

Plan to attend Alumni Day at M.I.T. on June 6

1915

Under the enthusiastic and stimulating leadership of Jack Dalton, President of the Alumni Association, the Alumni Fund is progressing steadily. It is up to us to do our bit for Technology and, too, we have got to help Jack. On March 22, 58 men in our Class had subscribed \$5,020. This is 12.3 per cent of the Class, an average of \$86.70 per donor and an average of \$10.70 per man. This isn't a very responsive showing for us, and again I urge you all to send in your checks. Be proud to feel that you can help to do something worth while for the undergraduates. Jack is confident of having some important totals and news to disclose on Alumni Day. Let's make him proud of his own Class with a big total for 1915.

On Monday, June 6, the Class will hold a cocktail party in rooms reserved for us at the Hotel Statler, Boston. The Alumni Dinner that night will be there also, and with plenty of parking space around the hotel, it will be very convenient for us to meet in our rooms before the dinner. Remember, this is free to all members of the Class, and you are urged to bring your guests, both male and female.

From Binghamton, N.Y., Joe Livermore wrote that he is in the construction business and working down there on some new industrial buildings. — When Howard Thomas served the Class so faithfully as secretary, his wife, Barbara, assisted in the gathering, composing and typing of his notes. She thereby acquired an acquaintance with a good many of the names in our Class and friendships with several of the men. Barbara is now secretary to Professor Page '02 of the Physics Department at Technology, and it is always nice to see her. She is always interested to know what is going on in our Class, and it gives us pleasure to know she retains her old feelings for 1915. Her daughter, Virginia—who, if I am not mistaken, is the class baby, born in July, 1916—has a secretarial position in a Boston bank and really enjoys the news of 1915 almost as much as her mother does.

Other news from our classmates is scarce, in fact, is nil; so remember Herb Swift's movies and "Help Azel." — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline, Mass.

1916

Our illustrious classmate, Walter D. Binger, I, commissioner of borough works for the borough of Manhattan, city of New York, on Monday, March 7, submitted plans to the Borough President involving the construction of a cross-town, twin-tube vehicular tunnel to be constructed between 36th and 37th Streets in New York City. Walt's revised plan of construction and location indicates a potential saving to the city of more than a million dollars over that previously contemplated. New York papers further stated that under Mr. Binger's plan the twin tubes would have double lanes for fast and slow traffic. The purpose of the

tubes is to provide rapid cross-town transit for vehicles using the newly opened Lincoln Tunnel and the Queens-Midtown Tunnel.

Willard C. Brown, VI, who is a lighting engineer associated with the Nela Park Laboratories and who is a member and director of the council of the Illuminating Engineering Society, addressed the American Institute of Illuminating Engineers in Washington, D.C., on February 8, on the subject, "New Light Sources." Incidentally, Brown now is a member of the United States Naval Reserve and in December was promoted to the rank of commander.

Bill Drummey, IV, architect, athlete, artist, musician, author, and sportsman, superintendent of the department of school buildings, city of Boston, has given up that office. He was a special lecturer at the Institute in 1936. He traveled to Europe three times for special studies in architecture. He has been president of the Boston Kiwanis Club; has served as vice-president of the Boston City Club; and, aside from school buildings in Boston, has designed similar structures for Revere, Everett, Narragansett, Athol, Quincy, Foxboro, and other places in Massachusetts. His book, "Historical Chapters of Unionism in Massachusetts Building Trade," came off the press in 1937. He collects stamps, is an artist in water colors and pen and ink, is an expert shooter, swims with ability, plays chess, and professes to understand the game of poker. Bill, there are a lot of your classmates looking forward to challenging your prowess in these sports, particularly the latter one, at our 25th reunion in 1941.

I understand that Don MacRae, III, is living in California. Perhaps some of our classmates will run into him out there and let us have some news of his doings. — In conclusion, I have the following from Dave Patten, IX: "It seems that a colored porter of the more seasoned variety had spotted the steel magnate, Charles M. Schwab, and was particularly attentive. Mr. Schwab was prompted to inquire, before reaching his destination, what the average tip amounted to. Whereupon 'George' smiled broadly and said: 'One dollar.' When Mr. Schwab arrived at his destination and came across with a dollar tip, George remarked with much affection: 'Sir, you are the only one to come up to the average.'" — For more and better class notes, write your Secretary. — JAMES A. BURBANK, *Secretary*, The Travelers Insurance Company, Hartford, Conn. STEVEN R. BERKE, *Associate Secretary*, Coleman Brothers Corporation, 245 State Street, Boston, Mass.

1917

Howard Stewart has resigned from the Stewart Boiler Works to become associated with the Economic Machinery Company at Worcester, Mass., "largest manufacturers of labeling machinery in the world." A few days before his official retirement from the boiler and tank industry he was given a grand farewell dinner by the New England Truck Tank

Association. He had served its members on an advisory council and as a delegate from New England to the national association, as well as in connection with the N.R.A. and other activities. He refused permission to publish the speech delivered on that occasion.

William A. Sullivan has returned from Shanghai to Washington, and we understand that he is now stationed as lieutenant commander at the navy yard there. — Hamilton L. Wood was actively in charge of the solicitation for gymnasium funds in the Boston area until he was called on the jury. The time was not too propitious for Ham, because the writing of automobile insurance is particularly heavy in this session of the year. He hoped to be able to catch up on his business affairs to some degree when the jury was released, but his extracurricular activities were necessarily abandoned. The cloak has fallen on the broad shoulders of Arthur D. Dickson who organized the intensive drive for March called for by the general committee of the Alumni Drive and, at this writing [March 22] is devoting much of his time and energy to its conduct.

Lawrence L. Clayton has recently been promoted to the rank of major in the Coast Artillery Corps. He is at present stationed at Fort Worden, Wash. — Edward Pennell Brooks has recently been made factory manager for Sears, Roebuck and Company, succeeding W. I. Westervelt, who has retired. Penn was among the early employees of the retail organization of the company and was the first retail merchandise manager. He has lately served as supervisor of the merchandise departments handling radios and accessories, dairy and power equipment.

In replying to your Assistant Secretary's despairing wail for news, Dick Whitney writes: "On a last-minute Christmas errand, I dropped in to one of the Kayser silk shops on Fifth Avenue the afternoon of December 23 and, as always, experienced that feeling of embarrassment to which men seem subjected when in places of this sort. Somewhat to my amazement, yet gratified to be able to share my embarrassed feelings with so able and unperturbed a classmate, I looked up to find Gus Farnsworth alongside me at the counter. We completed our respective purchases, sallied forth to the nearest bar, and had at least one bit of Christmas cheer and mutual commiseration before parting." — A recent note from Walter Harrington, who is also in the advertising business, indicates that he has been in touch with Dick Whitney at various places in connection with their business meetings which seem always to be held at pleasant places like White Sulphur Springs or Hot Springs, or Philadelphia — not to mention Marblehead, Mass.

A letter from Frank Peacock to Ray Stevens reports that he has completed his work in Nebraska as chief engineer for the Harza Engineering Company on the Loup River power development. This was a \$10,000,000 P.W.A. job. He was transferred to the Chicago office of

the Harza Company but in the meantime decided to go with the S. Morgan Smith Company as assistant general manager and chief engineer of the valve division at York, Pa. Frank indicates that the new work is interesting and that he is especially concerned with the revamping and simplification of the cone valves which his division manufactures. Nicholas Rugg Peacock was born at Columbus, Neb., on June 13 last, thus preventing Frank's attendance at the reunion. His oldest boy is now a student at Carleton College in Northfield, Minn. — Again Al Moody turns up in our correspondence, this time through Frank Peacock, who reports that Al represents the S. Morgan Smith Company at Denver, Col. It would seem to your Secretaries that it is time that Al sat himself down and wrote to one of us on his own account.

Irving B. McDaniel, lieutenant commander and inspector of naval material, United States Navy, at Atlanta, Ga., has recently been elected president of the Southern division of the Delta Tau Delta Fraternity and also president of the Atlanta alumni chapter of the same fraternity. Mac reports that the new job will require much travel in getting about to the various chapters in the Southern universities, but this, taken as it will be in Mac's stride and in connection with his regular official travels about the Southeast, will be just another drop in the bucket. Mac has recently seen George Kittredge in Cincinnati, where he is doing engineering work for the Army Engineer Corps, and for such members of the Class of 1916 as have acquired the wise habit of reading 1917 notes now and again, we might add that Mac also has seen Dina Coleman aboard his cruiser at Corpus Christi, Texas. — RAYMOND STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass. PHILIP E. HULBURD, *Assistant Secretary*, Phillips Exeter Academy, Exeter, N.H.

1918

Looking every millimeter the fastidious and sovereign gentleman he is, Al Murray's forthright eyes twinkle at you from page 5 of the February *Foundation*, official publication of the Engineering Society of Detroit. On Wednesday, March 2, the society, together with the Ann Arbor section of the American Institute of Electrical Engineers, heard Al talk on "Television — Its Progress and Problems." That the dizzy circumference of those problems at last is approaching a center was explained, so the report goes, in "nontechnical terms." Groping along we were frankly bewildered by such nontechnical jargon as wide-frequency band, high-definition pictures, and ontogeny recapitulates phylogeny.

"When the editor of The Foundation was in Philadelphia a few weeks ago he had the delightful opportunity of calling on Mr. Murray at his office which is surrounded by countless laboratories where there is being carried on all phases of research, experimentation, manufacture, testing and televising amidst hundreds of special vacuum tubes for the tele-

vision camera and for the receivers, wires, cables, cabinets, dark rooms, light rooms, a veritable maze of equipment. . . .

"Mr. Murray has had a rather unique engineering background. Upon graduating from M.I.T., he entered the U.S. Air Service. After the War he became Engineer in Charge of Torpedo Control for John Hays Hammond, Jr., of Gloucester, Mass. A considerable portion of the five years he was engaged in this interesting work was spent on board submarines operating out of Boston and Newport. Late in 1924 the first completely submerged radio controlled torpedo was ready for its initial run. This test was carried out in Narragansett Bay, not far from the War College. The torpedo responded perfectly to each radio control impulse."

Al received his A.B. from Maryville College in Tennessee, an S.B. from you-know-where-and-when. Holding up the patches of his career for your inspection would begin with a thread that connects many of us with the War, i.e., the aviation service. Parachuting after the Armistice, he landed with Mr. Hammond, porpoised into the position of assistant chief engineer for the Wireless Specialty Apparatus Company. Thence he has been, successively, electrical engineer for the Raytheon Manufacturing Company, acting chief engineer for the Jenkins Television Corporation, division engineer in charge of research for the R.C.A.-Victor Company, before occupying his present position with Philco.

A large and somewhat tumultuous reunion comes apace. Harold Weber, with sweet composure of spirit and a glint of the cloven hoof in his eye, says he has a grand collection of pictures made not only in those unregenerate undergraduate days but also at our reunions. He took photographs in 1918, in 1923, in 1928, and in 1933; so you see he has had almost 20 years' experience. This qualifies him to present an illustrated talk on the "Eighteeners and How They Grew," which he swears will stop us from breathing altogether and recall many a moment of unleashed confidence. If you have any of those early candid camera efforts, please send the negative to Professor Harold Weber, M.I.T. He promises: (1) to return your film undamaged; (2) to give you a credit line; (3) to give us such a debauch of memory as to cause a star to chuckle in its course. Remember how we chortled over Ed Rogal's movies of Weekapaug in 1928, which he showed us in those destroying days of the 1933 reunion?

All of which, by easy stages, has brought us to the exciting news that after a spasm of concentration lasting until the merits of the case could be settled over a midnight snack of crackers and cheese, the committee on location and dates has signed on for three days of foot-loose comradeship at Weekapaug, R.I., June 24, 25, and 26. — No excuses — be there! — F. ALEXANDER MAGOUN, *Secretary*, Room 5-117, M.I.T., Cambridge, Mass. GRETCHEN A. PALMER, *Assistant Secretary*, The Thomas School, The Wilson Road, Rowayton, Conn.

1919

It is with great regret that I announce the death of Henry J. Bruno of Winchester, Mass. Henry's good nature and friendly personality are remembered by all the Class. I recall meeting him on the street one day, many years after graduation, and after shaking hands I supplied my name and "M.I.T. '19," to which Henry replied laughingly, something like, "Sure, I remember; you don't need to mention that; I am not that kind." Henry knew virtually everybody in the Class and remembered them indefinitely.

The following interesting clipping appeared a few weeks ago in the Boston *Herald*: "Mrs. Charles Borden Chase of Fall River announces the engagement of her daughter, Miss Florence Whitman Chase, to Mr. William Bradlee Snow of Cambridge. Miss Chase is a graduate of the Howe-Marot School in Thompson, Ct., and the Katharine Gibbs School in Providence. Mr. Snow, the son of Mrs. William Gage Snow of Duxbury, is a graduate of Phillips Academy, Andover, and the Massachusetts Institute of Technology." Good luck, Bill, old boy. Better late than never! We hope you will still find time to play an occasional game of squash and golf. — ARKLEY S. RICHARDS, *Secretary*, 26 Parker Street, Newton Center, Mass.

1921

Dave Woodbury is turning out new books; Eddie Whitman is publicizing the dear old banana navy; Wint Dean is digging up through a St. Paul snowbank to ascertain that summer is almost with us; and the other 792 members of the Class are engrossed in their own individual contributions to humanity or to the tax collector. Alas, there is no joy in Chatham because the dire slump in news has denied us the details of all these activities. If Larry Conant and Cap Officer can't take time off from their own work in Washington to get Congressional aid for not printing class notes, we are faced with utter ruin. So it's W.P.A. for ours — we'll print anything! That is, anything but the stories emanating from Norm Patton, Trev Peirce, Andy Jensen, and such like! What's your news?

John D. Crecca, commander in the United States Navy, saves us from oblivion this month with live news of a well-earned promotion for which he is receiving congratulations. Bob Ellis' ('20) Newark *Evening News* gives the following complete account under date of March 1: "Naval Lieutenant Commander John D. Crecca, formerly of Newark, N.J., was promoted yesterday to the post of Commander in an order signed by President Roosevelt. Commander Crecca is stationed at Washington. He was graduated from Barringer High School in 1914. He is a son of Mr. and Mrs. Daniel Crecca of Newark and has two brothers who are prominent in Newark medical circles. He is assigned to the Construction Corps where he supervised construction of the U.S.S. Northampton and the airplane carrier Lexington. During the war

1921 Continued

he served with the fleet in foreign waters and afterwards attended M.I.T. where he received his Master's degree in Naval Construction. He is married and has two children."

Thumbing the last issue of the Directory of the Alumni Association, we note a number of the Class in various activities of the organization. Larcom Randall is on the Committee on Assemblies busily preparing for Alumni Day, besides representing the Technology Association of Minnesota on the Alumni Council. Warrie Norton is a member of the Committee on Nominations for Advisory Councils as well as of the Committees on Assemblies and on Student Welfare, and represents the Technology Club of Southern California on the Council. Chick Kurth represents 1921 on the Council and Professor Johnny Rule acts for the Technology Club of St. Louis. Charlie Herty has been honored with membership on the Departmental Visiting Committee on Course XIX, Metallurgy. In Maryland, Whit Spaulding is secretary-treasurer of the M.I.T. Association of Baltimore. Eddie Farrand is secretary of the very active Technology Club of Chicago, and Mac McNeill of Stevens' Seventeeners vouches for Eddie's capable administration of many duties. Paul Rutherford, the handsome young chief engineer of Delco Products, presides over the Technology Association of Dayton, Ohio. Eddie Praetz wields the gavel for the Technology Club of the Merrimack Valley, comprising Lawrence and Lowell, Mass., and Wint Dean is the Lord High Everything of the Technology Association of Minnesota, which meets in Minneapolis. Your Scribe serves on the M.I.T. Club of Northern New Jersey. Ira Jones heads the M.I.T. Alumni Association of Nashville, Walt Church of Portland keeps minutes and holds the tin box for the Technology Club of Oregon. Two more presidents are Herbie Nock of the Technology Club of Schenectady and Gene Rudow of the Technology Club of Puget Sound, Seattle. Larry Conant publicizes the Washington Society of the M.I.T. in the District of Columbia. Six presidents, a vice-president, and four secretaries seem to win the mythical blue ribbon for 1921 this year.

Among the Honorary Secretaries of M.I.T. are: Ed Farrand, Chicago; Hal Lockey, Great Barrington, Mass.; Wint Dean, St. Paul; Gene Weil, St. Louis; Munnie Hawes, Bill Emery, and Cac Clarke, New Jersey; Irv Peck, Binghamton, N.Y.; Irv Jakobson, Brooklyn, N.Y.; Bill Sherry, Tulsa, Okla.; Ed Noyes and Charles Herty, Pennsylvania; Simon W. Freese, Forth Worth, Texas; and Charlie Manneback, Brussels, Belgium.

To round out the class statistics for the month, here are some addresses which have come to our attention recently: Commander Joseph W. Fowler, XIII-A, force constructor, U.S.S. *Richmond*, San Diego, Calif.; Albert S. Genaske, I, 32 Hyde Street, Newton Highlands, Mass.; Professor Victor O. Homerberg, III, Room 8-409, M.I.T.; J. Rowland Hotchkin, II, 9 Sinclair Terrace, Short Hills,

N.J. (how about telling us what the Palnut Company is, Hotch?); John J. MacNeil, VI, Mene Grande Oil Company, Apartado 234, Maracaibo, Venezuela, S.A. (After many years of silence, a member of the MacNeil hockey triumvirate from Nova Scotia turns up far from home. Let's hear from you, Mac.) Other new addresses: Alan L. Morse, IX-B, 355 Becker Avenue, Bramwell Park, Silver Springs, Md.; Marshall G. Munce, II, York Shipley, Ltd., North Circular Road, Hendon, London N.W. 2, England; Lyall L. Stuart, IX-B, 2 East 93d Street, New York, N.Y.; Mrs. Edward Warren, VII, 16 Elm Street, Concord, Mass.; Lieutenant Colonel Ludson D. Worsham, I, Engineers School, Fort Belvoir, Va.

Make use of that extra hour of daylight to write us your news. Do it now, before golf, gardens, and going places interfere! — **RAYMOND A. ST. LAURENT**, Secretary, Rogers Paper Manufacturing Company, Manchester, Conn. **CAROLE A. CLARKE**, Assistant Secretary, 10 University Avenue, Chatham, N.J.

1923

Your class officers have not been idle in the matter of the forthcoming 15th reunion. This is the first set of Review notes, however, in which any detailed plans could be announced. Bob Shaw has appointed Pete Pennypacker to run the affair, and an executive committee is being assembled. This has progressed to the point where a decision could be made as to when and where the reunion should be held. There was unanimity that Riversea Inn, Old Saybrook, Conn., was about right — a fact borne out by the very pleasant 10th reunion held there in 1933. So mark your calendars for June 3 to 5 at Old Saybrook. This date makes it possible for any who wish to come to Technology for Alumni Day, Monday, June 6. The present plans are that the crowd should arrive at Old Saybrook, Friday afternoon, June 3, and the party will not break up until Saturday night (or Monday morning for those who wish to stay over). Let's have your reservations promptly. By the time these notes appear, you will probably have a circular giving fuller information.

Assisting Chairman Pennypacker is an executive committee made up, at this writing, as follows: Bob Shaw is serving as national chairman of a subcommittee on roundup. Others include Jim Brackett (entertainment), Lem Tremaine (roundup, New York district), Howard Russell (roundup, Boston district), Bernie Proctor (reunion treasurer), Walt Marder (transportation and hospitality), and your Secretary (publicity). Jack Cochrane has promised to try to get together some movies of former reunions and other items of interest and hopes to be able to bring them along personally. If he cannot, Pete has arranged with Fred Mann to look after this detail. John Burchard is in general charge of the Alumni Day activities at Technology and will arrange special headquarters facilities for those coming from Old Saybrook to Boston for the Alumni Day observances.

When I was in Pittsburgh in February, I saw Howard Dexter and Charlie Mapes, a fact I find I have not previously reported. Dexter is an old resident of Pittsburgh by now, but Mapes is there by a recent transfer of his telephone company duties. — Thanks to a letter from John H. Perry, V, I have caught up with his activities. He has been with the Du Pont Company since 1925 but was transferred five years ago to the Grasselli Chemical Company at Cleveland. A year ago the transfer of the Grasselli Chemical department from Cleveland to Wilmington brought Perry back there. While with Grasselli he has, successively, directed research and pilot-plant development work on sulphuric acid, served as sulphuric acid technologist and special assistant to the chemical director. Since a year ago he has been head of the new products group of the development section. He is well known in his field, having served as editor in chief and coauthor of the "Chemical Engineers' Handbook," published in 1934. Currently he is secretary of the papers committee of the American Institute of Chemical Engineers.

The Boston *Evening Transcript* carried the announcement, on March 5, of the engagement of Miss Anne Maria Therese Johnson of Arlington to Allard Mayo Valentine, I. — Louis H. Skidmore, IV, is again in the news — this time because his architectural firm, Skidmore and Owings of New York, have designed the R.C.A. exhibit building for the New York World's Fair. A picture of it appeared in the *New York Times* for February 7, with the announcement that it would be used to house a television exhibit. — Dave Skinner, XIV, has been named managing engineer of the appliance section of the General Electric Company by the manager of the Bridgeport works. With this appointment he becomes responsible for both engineering and manufacturing of the appliance section. — **HORATIO L. BOND**, Secretary, 18 Jefferson Road, South Braintree, Mass. **JAMES A. PENNYPACKER**, Assistant Secretary, 96 Monroe Road, Quincy, Mass.

1925

May I take this opportunity to remind you of the Alumni Day activities scheduled for June 6. It should not be difficult for the Class to exceed its record of a year ago. Let's have a good turnout.

A long letter has come from John J. O'Brien, VI, who still carries on in and about Providence, R.I. He has been with the New England Power Association for nearly 10 years now and since February, 1929, has been located in Providence. His first work there was on design of a low-voltage alternating current network. In May, 1930, he was given the job of supervising the installation of such a network. Progress along this line has made John superintendent of underground lines in charge of an organization comprising about 50 men. Although Providence has a rather small business area, it has quite an extensive underground electrical system, which is being rapidly extended. As superintendent of this system,

1925 Continued

John has complete charge of installing, maintaining, and operating the underground lines. It is a 24-hour a day proposition, and when there is trouble, he must be on the job. It is a fine tribute to his work that trouble calls are infrequent. He enjoys his work very much and, in addition to checking the quality and quantity of the work done by his men, he finds it necessary at times to help them out with their family troubles. John is happily married and has two children, a girl who is now three-and-a-half years old and a boy about one-and-a-half years old.

It seems almost impossible to keep track of G. B. Blonsky, III. We just about get the Count located in one place, when he pops up hundreds of miles away. At last reports he was back in San Francisco. His mine examination work in Idaho has been completed, and he is now waiting for the start of underground work and mill construction in that area.

A news clipping states that Alfred Malagodi, II, of Whitman, Mass., was recently sworn in by United States Attorney Francis J. W. Ford as assistant United States attorney to succeed Judge Frank W. Tomasello of the Boston Municipal Court. Malagodi was appointed by Homer S. Cummings, United States attorney general. Following graduation from M.I.T., he attended the Boston University Law School, from which he was graduated with the class of 1928.

Looking over the address changes which have reached me during the past month, I find the names of two men whose locations have been unknown for some time: George Paul, I, shows up in Mercer, Wis., and Regnold B. LaRue, VI-A, is now in Baldwin, N.Y. Claude G. Lindberg has moved on to New York City from Providence, R.I., while Captain Edgar R. C. Ward, VIII, has returned to Fort Monroe, Va., following several months at Wellsboro, Pa. — F. LEROY FOSTER, *General Secretary*, Room 6-202, M.I.T., Cambridge, Mass. HOLLIS F. WARE, *Assistant Secretary*, 17 Green Road, Medford, Mass.

1926

One of the pleasant by-products of the Alumni Fund Campaign has been that it has brought news, visits, and letters from many members of the Class. It has revealed, for example, that Mooney Owen is becoming an increasingly prominent figure in civic affairs in Washington. He is active in the Community Chest Campaign and was in charge of the entertainment at the annual midwinter dinner of the Washington Board of Trade. — Jim Offutt reports that W. Howard Emerson is in charge of engineering for the Homer Laughlin China Company, the largest manufacturer of dinnerware in the world, located at East Liverpool, Ohio. Howard has been doing some pioneering work in the mechanization of the pottery industry. — S. S. Randall, Jr., is well known in the printing business in Boston as "The Envelope Man," specializing as he does in the sale of envelopes and paper specialties. — César Canals is with the Fred-

erick Snare Corporation, with headquarters at Lima, Peru. Recently he has been working up a project for a new port development in the south of Peru. Evidently his work is effective, for the job is to be undertaken and he is to be in charge of it at Mollendo, Peru.

Announcement has been made of the engagement of Miss Evelyn Osborne Squire of Ossining, N.Y., to Harvey Willard Culp. Culp was in our Class but not for the entire four years, having left to go to Columbia. At the present time he is a lecturer in psychophysiology at the New York Institute of Dietetics. He is on the staff of the technical department of the Babcock and Wilcox Company, and he is part owner of the W. S. and A. M. Culp contracting and building firm in Chestertown, Md. — Bud Wilbur presented a paper, entitled, "Model Analysis of Structures," before the Boston Society of Civil Engineers, and as a result won the designers section prize of the society for the best paper presented during the year. — Earl Wheeler and Tom Green both have called at the office in recent weeks, thus giving us good coverage of the Hartford situation. Earl is half of the building construction firm of Peaslee and Wheeler, Inc. He and Peaslee '14 have thrown the resources of their office into the Alumni Fund Campaign, and together with the other members of the committee in Hartford have done a remarkable job of reaching our Alumni in that region. Tom Green is one of the Institute's Honorary Secretaries, which means that he interviews prospective students and in other ways acts as an agent of Technology. — J. RHYNE KILLIAN, JR., *General Secretary*, Room 11-203, M.I.T., Cambridge, Mass.

1927

Word has come telling of the engagement of Don Miller to Miss Ruth Eleanor Hall of Hartford, Conn. Don recently left Hartford, where he had been an instructor at Trinity College, to become a research physicist for the United States Steel Corporation and is now located in Elizabeth, N.J. — Alec Fisher, who is with the General Electric Company at West Lynn, was recently granted a patent on an "inductor dynamo electric machine." The patent was assigned to G.E. — Laurence Coffin is with the Goodyear Tire and Rubber Company and located in Argentina, where he is doing technical work for the company. He has a son, four years old, and a daughter of seven months.

From Winnipeg, Canada, comes the announcement of the engagement of Miss Marjory Glassco to Dudley Young, who is now located in Evanston, Ill. — Another bit of matrimony comes in an announcement of the marriage of Miss Ann Lennihan to Parke Hodges in New York on December 4, last. — Ewan Hayes is still located in Detroit, where he is connected with the automobile industry. Sorry I cannot give any more detail concerning this phase of his life. However, he reports progress to the extent that last June he journeyed to North Carolina and brought back a bride.

J. G. Nash is living at 4827 North 1/2 Street in Galveston, Texas, where he is working with Austin Bridge Company on the Galveston Causeway. Nash has been with the Austin Company since graduation. — Al Smith is reported as being in Evansville, Ind. He is married and is the Electrolux engineer with Servel, Inc., where he has been ever since graduation. — At the instance of Dr. Compton's visit to the Chicago Alumni, the following '27 men had a very pleasant evening together: Nate Cohn, Maurice Davier, Tom Russell, Dyce Coburn, Ed Wells, Phil Creden, and Ray Hibbert. Davier and Wells happened to be around Chicago on business. Burnell and Goble of the Class of '28 joined with us to make the occasion quite worth while. — Nate Cohn reported that he had just recently come to Chicago from the Coast and is now district manager for technical sales for Leeds and Northrup Company. He was with this company when on the West Coast.

Word has come telling of the death of Ronald Crowley on January 14 in Cornwall, Pa., as the result of an automobile accident. Crowley continued his interest in mining after leaving the Institute and at the time of his death was connected with the Bethlehem Steel Company as a mining engineer. — Your Secretary must report also the death of George Munroe, who passed away in Auburn, Maine, on November 23. Further information is not available.

By the time this column is in print, Alumni Day will be pretty close at hand. To those who are fortunate enough to attend, your Secretary suggests that the '27 men get together sometime in the early evening before the banquet, to renew old friendships. I leave the responsibility for the arrangements and place of such a gathering to the spontaneous inspiration of you men there. — RAYMOND F. HIBBERT, *General Secretary*, Care of Johns-Manville Corporation, Waukegan, Ill. DWIGHT C. ARNOLD, *Assistant Secretary*, Arnold-Copeland Company, Inc., 222 Summer Street, Boston, Mass.

1928

"Our Gymnasium," the subject of several recent mailings by the Alumni Fund Committee, has certainly brought the need for a new gymnasium unit to our minds in a most vivid fashion. It is the biggest need that we, as Alumni, have been called on to fill and we hope those of you who haven't filled out checks or pledge cards will do so at once. The Institute needs your support.

The following very interesting article about Frank Wattendorf appeared in a recent issue of the Boston *Herald*: "Dr. Frank Wattendorf of Newton, 35-year-old engineer who designed China's first wind tunnel, returned from the Orient last night on a stretcher. Cheerful, despite an arduous boat trip from Shanghai and an airplane flight from San Francisco to Newark, the aeronautical expert arrived at the South station early last night to be taken to the City Hospital in an ambulance.

Plan to attend Alumni Day at M.I.T. on June 6

1928 Continued

"Dr. Wattendorf had been stationed at the Chinese air base in Nanking for three years until taken with an undiagnosed illness that paralyzed his left leg several months ago. The leg was put in a cast before he left China. Mr. and Mrs. Frank M. Wattendorf of 9 Chapin road, Newton Centre, parents of the patient, and two physicians were at the station to meet the train. After greeting his mother and father, Dr. Wattendorf expressed the hope that he would recover sufficiently to return to China before the end of summer.

"Dr. Wattendorf, a recognized authority on aeronautics, was graduated from Harvard in 1926 and from the Massachusetts Institute of Technology two years later. He received a fellowship at the California Institute of Technology and studied at Aachen and Göttingen Universities in Germany before leaving for the Orient. 'China has tremendous manpower, but no organization or mechanization,' he said commenting on the Sino-Japanese war. 'Under Chiang Kai-shek, the Chinese government is developing a great nationalist spirit which has been reflected in the defense of the country.'"

I have before me tear sheets of pages 14, 15, 16, and 17, from *Electronics* magazine for February. On these pages is an article written by Bill Bendz of Westinghouse on the subject, "Consider These Things in Applying Electronic Door Openers." This interesting feature is well illustrated with photographs and drawings showing several variations in the technique of opening a door without anything more than the interruption of one or two light beams. Congratulations, Bill! It was a swell job!

Now, finally, have you sent in your reply on the class reunion? Full details were mailed to you several weeks ago, and the volume of replies has been most encouraging. There are some fellows who have apparently put the reply coupon and envelope aside, but please don't delay a day longer in sending it to Bob Harris. The full reunion cost is \$19.28 for 1928's 10th reunion at Ye Castle Inn, Saybrook, Conn. This covers the total period from 5 P.M., Friday, June 3, through late afternoon, Sunday, June 5. We are hoping that everyone will send in his dollar whether he can come or not. For those who can't possibly come, this dollar will be their contribution toward the success of their 10th reunion.

Remember your 10th reunion comes only once! It's a big event. Don't miss it. Send your letter today to Bob Harris, Room 3-402, M.I.T., Cambridge, Mass. — GEORGE I. CHATFIELD, *General Secretary*, 5 Alben Street, Winchester, Mass.

1929

At long last your Secretary has the opportunity and great pleasure of announcing the arrival, on February 28, of a baby daughter, Alice Judith Glen, weight nine pounds, three ounces. This is our first child, and of course she is the finest baby in the world, to us at least. Mother and daughter are doing well, though complications kept Mrs. Glen in the hospital an extra 10 days with special nurses

night and day; that is over now and she is home recuperating. The baby has been holding her own since her arrival and on her third birthday (third week) weighed nine pounds, 13 ounces; so I guess she is not starving. Enough of our family; let's hear about yours.

Now to the news about the rest of the Class: From the news clipping services we learn of the marriage in New York on September 25 of Ace Vernon, X, to Miss Frances Louise Hitch of Wilmington. Ace is with Du Pont in Wilmington as chemical engineer and, according to the newspapers, the couple will reside in Wilmington. Since this notice is rather late, it is presumed that they are now established in that city.

From more recent news clippings we learn of the following engagements: Rudy Wisbrun, I, to Miss Eleanor Kops of Park Avenue, New York. The announcement stated that the wedding would take place in April. The 1935 Register of Former Students listed Rudy as being with Juarez Mercantile in Juarez, Mexico. — Walt Partridge, II, to Miss Dorothy Clark Trott of Andover, Mass. The Register lists Walt as assistant mechanical engineer, Boston Blacking and Chemical Company of Cambridge, Mass.

The Boston *Evening Transcript* of February 16 reported that Frank Stratton, V, has been awarded a \$2,000 grant-in-aid by the Association of American Colleges for a year's advanced study in music. Frank has been instructor in music at Massachusetts State College for the last few years, after receiving his bachelor of music degree in 1932 at Eastman School of Music, University of Rochester. He was awarded a master of music degree the following year while on a teaching fellowship in Rochester. We congratulate Frank on his progress in the field of music. No doubt we will hear more of him.

Boston papers of January 30 told of the success of Dan Danziger's wife as a radio star. She is the Hannah Klein of the duopiano team of Klein and Gilbert and has been married to Dan about five months. She was a featured artist on the Rising Musical Star broadcast at 10 P.M., January 30, through WNAC. The last Register of Former Students listed Dan as a chemical engineer with the Metasap Chemical Company of Harrison, N.J.

Once again we are grateful recipients of a newsy letter from Bill Hutchinson's (III) wife, announcing the fact that they have moved again — this time to Amador City, Calif. She writes as follows: "Just another address for the new file card, given above (Box 244, Amador City, Calif.). We left Boston, January 14, arriving here January 22 — bag and baggage — with family tagging along. Bill is now with the Fremont-Gover Mine, here in Amador County on the old Mother Lode, and we hope for our own sakes — and your file — that it will be somewhat more stable than our previous addresses." — We enjoy these contributions by Mrs. Hutchinson and since our classmates do not seem to find time nor have the inclination to write themselves, we wish

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more of the wives would take the pen in hand and bring us up to date. Of course if you cannot get your wife to handle this task for you, we would be more than happy to receive just a line or two from you. A penny post card will do. This volume of *The Review* will be complete soon, and another year will have passed since we left Boston. How about telling us in a few words where you have been and how you have been? We are all interested. — EARL W. GLEN, *General Secretary*, Box 178, Fairlawn, Ohio.

1930

Three weddings occupy our interest as we go to press. Lester Steffens, X, took as his bride Miss Edith Riach of New York City on January 21. Another Course X man became a benedict when Ed Nolan was married to Miss Irene Murphy of Boston on February 28. Ed received his Ph.D. from the Institute last year. — February 19 marked the wedding of John Schroeter, IX-B, to Miss Frances Perry of New York City. — Of particular interest to Course I is the announcement of the engagement of Les Engler to Miss Doris Marie Howard of Watertown, Mass. The prospective groom is studying for his doctor's degree at Columbia. — Jack Latham, II, is the proud father of a baby daughter, born on February 10. The Lathams now have two children, Bill being nearly two years old. — To all of you gentlemen the Class extends heartiest congratulations!

Alumni Day on Monday, June 6, promises to be the best since the event was inaugurated several years ago at the time of our five-year reunion. Any who are lukewarm on the subject can rest assured that the committee has planned a day packed with good-fellowship and entertainment from early morning until the last strains of the Stein Song at the dinner in the Statler. We'll count on seeing you all on that day; so be sure to reserve it and then just come and enjoy yourselves! — PARKER H. STARRATT, *General Secretary*, 75 Fenno Street, Wollaston, Mass.

1933

One month to go — you know the dates, June 4 and 5. Class of 1933 Five-Year Reunion. By this time you have heard from us direct and know the place, and I hope we have your reservation. If not, send it right in; we would like to know how many we can figure on. The more the merrier!

During the past month we had only one notice from the society columns, and that is the announcement of the marriage of Alfred G. Payne to Miss Viola Marion Snow at Westerly, R.I., on February 26. They plan to live on School Street in Westerly.

Mal Mayer has been doing a bit of corresponding with some of the boys in Course IX, and he has something to report this month. Mal, as you know, is with the Schwartz Laboratories in New York. From Mal's comments their chief occupation is that of research work on beer. Their main problem seems to be that of getting rid of all the beer they produce.

1933 Continued

Not being a regular brewery, they are not allowed to sell it. Sounds like one tough job. Mal had word from Charles F. Van de Water, who is a junior engineer with the Metropolitan Water District of Southern California at the Colorado River Aqueduct. Van de Water planned to be married on March 25. Mal also had a card from Robert Dobson, who is living at 2425 Sewell Street, Lincoln, Neb., and is manager of the bridge and structure department of Dobson and Robinson Construction Company; he has been married for four-and-one-half years to Lucille Carothers of Falls City, Neb., and has one son, Arthur, aged three. Another card came from John W. Robins, who is working for the American S. and B. Instruments division of Manning, Maxwell and Moore, Inc., of Bridgeport, Conn., as a development engineer on aircraft instruments. He was married on June 6, 1936, to Miss Margaret Notman of Needham, Mass., Wellesley '32.

We have a note, I think from *The Tech*, which is self-explanatory: "We were very fortunate in having Professor Wildes ['22] call our attention to some interesting as well as important news that is, as yet, not generally known. Doctor Norman Levinson '33, of the Department of Mathematics at the Institute has recently been asked to write a book for a Colloquium Series of the American Mathematical Society, and has also been asked to become Associate Editor of the *Duke Mathematical Journal*. These are distinct honors and Dr. Levinson is to be congratulated. After graduating from the General Electric Option of VI-A in 1933 he was sent to Cambridge University on a fellowship to study mathematical analysis under Professor G. H. Hardy, who is considered one of the world's leading authorities on mathematical analysis. Professor Hardy once said that Dr. Levinson would soon be recognized as such an authority, and those predictions are materializing rapidly. From Cambridge where he studied a year, Doctor Levinson went to Princeton and did research for a year and a half, and became an instructor in the Mathematics Department here last year."

By next month's edition I hope we have plenty of news when the reservations start pouring in for our reunion. Our preannouncement response to the reunion, as this is being written, has been very gratifying and from all indications *the thing to do is to be there*. — GEORGE HENNING, JR., *General Secretary*, Belmont Smelting and Refining Works, Inc., 330 Belmont Avenue, Brooklyn, N.Y. ROBERT M. KIMBALL, *Assistant Secretary*, Room 3-102, M.I.T., Cambridge, Mass.

1934

It is with deep regret that we hear of the passing of Charles E. Buchanan, who died at his home on January 31 after a short illness. He was born in Boston and lived in Greater Boston all his life. He was employed as a management engineer by the Machine Composition Company. He was national president of Phi Mu Delta and a member of Pi Delta

Epsilon, national honorary journalism fraternity. He was a member of the interfraternity conference at the Institute and of Gridiron and Scroll. He served as business manager of the *Tech Engineering News* and, since his graduation, was active in the Technology Christian Association. Throughout the present Alumni Drive for funds for the new athletics building, he was a very active member in the Boston territory. His loss will be deeply felt by all who knew him.

I received a letter from Sam Joroff which contains quite a bit of interesting news. However, Sam says that some of the reports are hearsay and that he will not guarantee the accuracy of all of them. So, if anyone has been wrongly represented, please write in and register your complaint. George McCauley suddenly shifted from Eastman Kodak at Rochester and is now out at Kansas State College as assistant professor of applied mechanics and structural design. (They tell me the coeds are not bad out there. Hyah, Professor!) — Clifton West is working with the Glenn L. Martin Company in Baltimore. The new Kalamazoo Clipper is under his supervision. February marked the first anniversary of Clifton's marriage to the young lady from Montreal. — Eugene O'Brien has been kept pretty busy in the construction field in Chicago. Lately we hear he is back in Cambridge. Jerome Raphael, after about two years down at Tygart Dam, West Virginia, with the United States Engineers, is working on some more flood control dam problems in Pittsburgh. They say that he has been bitten by the ski bug. — Mal Stevens is with the Mechanical Engineering Department at Tech after about three years down in the Canal Zone working for the government. It seems as how a one-week hike on the Long Trail in New Hampshire revived his dormant longings for New England. Here is another fellow who likes his skiing. — Jim Eder has been doing research work on heat control for the American Radiator Company. New York City is his headquarters. He was the second member of the famous party of three that took the Long Trail last October. When it comes to handling an axe, George Washington better look to his laurels when Jim is around. — Phil Walker, Jr., is with the engineering department of the United Mutual Fire Insurance Company, located on the West Coast. Ken Warren is with the same company. His headquarters are in Chicago. He is happily married to a girl from Boston. — Vin Rother has been over in England and the Continent for the past few years. Last news from him was that he was in London, studying with the Architectural Association, School of Planning and Research for National Development.

Sam, himself, is the construction safety engineer for the general contractors erecting the new Irvin works, sheet and tin mill, for the Carnegie-Illinois Steel Corporation. The mill is located at Dravosburg, Pa., about 14 miles out of Pittsburgh. Latest reports list him as safe and sound, but who knows what tomorrow will bring for the safety engineer? Sam

says that he, too, is a ski enthusiast and suggests that we might start a ski club for the Class. That might not be such a bad idea. The week-end of March 12 I spent in Pinkham Notch, N. H., testing my flying hickories, and just offhand it looked like a Tech reunion, with the Class of '34 well represented. Jim Eder and Tuffy Emery had come on the train from New York; Johnny Westfall drove from Springfield; and Ray Ferris and Danny Strohmeier came from Quincy. Sunday morning Johnny Newbegin drove over from Rumford to complete the party. A number of other Classes were also well represented. They take their skiing seriously, these Tech boys.

Not long ago I got a call from Bob Roulston who is located in Boston once more. He has severed his connections with J. O. Ross Engineering Company of New York and is now working for the B. F. Sturtevant Company, Hyde Park, Mass. — A fellowship for study in Belgium has been awarded to Henry N. Andrews by the Commission for Relief in Belgium Educational Foundation, Inc. He is to study paleobotany. At present he is in Cambridge, England.

It is spring again and with the spring there is the usual upturn of engagement announcements: Maurice B. Marshall, Jr., is engaged to Miss Marion Donohue, daughter of Mr. and Mrs. Robert M. Donohue of Brookline. Jacob J. Jaeger has filed intentions with Miss Dorothy Mason, daughter of Mr. and Mrs. Hiram W. Mason of Belmont. George W. W. Brewster, Jr., is engaged to Miss Joan Ryerson, daughter of Mrs. Donald M. Ryerson of Lake Forest, Ill. Daniel Smith is taking the final step with Miss Matilda Rosenfeld, daughter of Mr. and Mrs. William Rosenfeld of Boston and Hull. And here is one you will have to decipher for yourselves; I have done my best and will have to admit defeat: "*Mercedes A. de Beanblossom saluda a Usted participando el enlace de su hijo Wilfredo con la señorita Margot Rodriguez Román. Rosario de Sta Fe, Diciembre de 1937. José Rodriguez y Mercedes R de Rodriguez saludan a Usted participando enlace de su hija Margot con el señor Ingeniero Wilfredo de A. Pflucker. Buenos Aires, Diciembre de 1937.*" Anyway, congratulations, Wilfredo.

We seem to be having a secession of some of the members of our Class: John Freehafer, Sidney Whitt, John Goheen, and William Cope have all deserted to the Class of '37, and Frederick Aldridge has changed his affiliation from '34 to '33. — Remember, men, you are the source of information for this column; keep that source trickling in, so we'll have something worth reading. — JOHN G. CALLAN, JR., *General Secretary*, 24 Quincy Street, Cambridge, Mass. ROBERT C. BECKER, *Assistant Secretary*, South American Development Company, Apartado 655, Guayaquil, Ecuador, S. A.

1935

Alumni Day draws nearer; so let me remind you that the meeting place for all those who attend will be the University Club; time, 5:30 P.M.; cost, whatever you

Plan to attend Alumni Day at M.I.T. on June 6

1935 Continued

consume. Don't miss this little get-together, even if you can't make the other events. Another reminder: Have you sent in your pledge card to the Alumni Fund? Help bring the Class back up among the leaders.

A few more marriage notes: Dick Shaw succumbed to the wiles of Barbara Livermore of Newton. The ceremony took place in Boston on February 12. Dick is still with The Travelers in Hartford, Conn. — Walter Roffe and Ruth Thompson have announced their engagement. You may remember Walt from freshman year. — David Geer and Helen Peters are engaged. Since his days in Course IV-B, Dave has managed to keep complete silence; so I can't supply news about his work. — George Bull, Jr., and Helen Curtis were married on February 19 in Buffalo. George is on switchboard installations for New York Telephone and Telegraph. — Charlie Bowen and Hope Ludlow said, "I do," on last Christmas Eve. They are living in East Orange, N.J., and Charlie is setting rates for General Electric in Bloomfield, N.J. — Usually reliable sources state that Bob Olsen will marry soon — a Pittsburgh gal, name unknown. Bob has left the McKay Chain Company of Pittsburgh and is working for Harbison-Walker Refractories Company as a mechanical engineer.

Miscellaneous odd items picked up during the month tell us that El Roth was down in Baton Rouge last November to put in a wage-incentive plan for the Mengel Company. There he met Art King of the same company, and together they did the rounds of the town. The Mengel Company makes plywood veneers and containers. — Bill Bennett is with Ernst and Ernst as a consulting engineer. This firm, well known as an auditing organization, is branching out into consulting engineering. Bill was formerly with House Gale Company. Since joining Ernst and Ernst he has been in Waterville, Maine, on a textile plant job. — Gerard DeGelder, Jr., has joined the Royal Indemnity Company in Louisville, Ky. — Jack Flaitz is now with the Union Producing Company in Houston, Texas. — Justin Briefer, with Liberty Mutual Insurance Company, has been transferred to New York City. — Utley Smith is now with Johns-Manville in New Jersey. — Bill Keefe is now in Chicago. As far as I know he is still working for General Electric. — Jim Notman is working in St. Louis. I believe he is with the B. F. Sturtevant Company at their branch office.

That's the news for this month, fellows. Let's have a few letters for the next issue. — ROBERT J. GRANBERG, *General Secretary*, McCulloch B-13, Soldiers Field, Boston, Mass. RICHARD LAWRENCE, *Assistant Secretary*, 111 Waban Hill Road North, Chestnut Hill, Mass.

1936

One of the main topics of discussion when Alumni meet each other at this time of year is Alumni Day, when all Alumni join the trek back to Tech. Be-

cause one of the main features is the opportunity to meet former classmates and ask each other "Do you remember that time in steam lab?" and similar topics, we all hope there will be a good delegation from the Class of 1936 at the events, which this year come on June 6. Of course, there will be many of us whose jobs will not permit a return to Cambridge, but others whose businesses can run without them for a day will be there. Moreover, we hope to see many who are still in the Boston district at the evening banquet in the Statler. Remember Alumni Day!

Before reporting the news for this month, there is another announcement. Many members of the Class have not been heard from for two years. In order for the news about these fellows to appear in the class notes before *The Review* suspends publication for the summer, they should write a letter to their Course Secretary or to the General Secretary before another week has passed.

Course I. Apparently Bernie Gordon did not remain long at the river lab in Vicksburg. He is now connected with the soils lab of the United States Engineer Office in Little Rock, Ark. At any rate, these government engineers certainly see the country. — A brief note from Elliott Robinson records the good news that he has been appointed an assistant instructor in applied mechanics at the Harvard Graduate School of Engineering. He is working in the materials and structures laboratory under R. W. Vose '31, former instructor at M.I.T.

Course II. Jim Patterson has been pretty busy out here in Buffalo with the Linde Air Products Company and reports no news from his group. He says he hasn't received a letter from any of the gang for more than a long time. Here's hoping next month will find some response from this, the second largest Course in the Class. — The whole Course is not isolated, however; we do have a brief word from two of the group: Laddie Reday's work with Graton and Knight Company has now taken him to Detroit where his business address is 1627 West Fort Street; and Dick Bryant is back at home, 47 Carver Road, Watertown, Mass. He is taking graduate work at the good old M.I.T.

Course III. I don't recall having reported that Stan Johnson, who is with the Carnegie-Illinois Steel Corporation in Pittsburgh, was transferred recently to the metallurgical department, where he has the title of metallurgical observer. In some of his spare time, he is taking courses in mechanical metallurgy and alloy steels at Carnegie Institute of Technology. Having gotten settled in the Schenley Arms Apartments, he writes about the Course III group: "The material I have at present is rather old, but since it will be new to many, here goes. Our first bit of news is from Texas Longhorn Dunlap, who, when last heard from in November, was working for the Standard Oil Company of California as a petroleum engineer. In his letter, Tex starts from the beginning: 'After completing my require-

ments for the Sc.D. last June, I came down to Texas and spent about a month taking a vacation (plenty of swimming and horseback riding) and then came out to San Francisco, where I went to work with the Standard Oil Company of California in the development department. After staying in San Francisco for about two-and-a-half months, I was transferred to the Los Angeles Basin, where I am now located. My work is most interesting and deals chiefly with studying the performance of wells and oil reservoirs. At present, I'm working in a field (Huntington Beach) in which a number of wells have been drilled in such a way that they curve and slant out under the Pacific Ocean. At least one well in the field has a deviation of 60 degrees from the vertical near the bottom of the well.' At this writing, floods are threatening in California; so let's keep our fingers crossed for old Tex until the sun shines again in California.

"Wally Mathesius crashed through with a nine-page letter, December 4. He reported Ford Boulware's falling down the mine shaft as was reported by Professor Locke '96 in *The Review*. It seems that Ford wrote me a letter which Wally forwarded, but unfortunately I didn't get it. Wally reports that Mike Kuryla is in Bingham Canyon with Ford. Mike, it is reported, is going through the lower forms of labor. Re Hornor is still in Bolivia battling, single-handed, the grim forces of nature. Wally, himself, is fast gaining a reputation as a super metallographic technician. It was he who prepared the pictures for one of the most important lectures given at the American Society for Metals convention at Atlantic City last fall. His work is soon to be published in book form, entitled, 'Metallographic Technique for Steel.' To quote from part of Wally's letter: '... I see that Jack Hamilton reports Harold Brown's (XIV) doings a mystery, but they are so no longer since he has moved in here at the United States Steel lab in Kearny, N.J., and is now working cheek by elbow with me. Previously, he had been working for the American Steel and Wire Company in Worcester, Mass. Another recent M.I.T. addition to the staff is Henry Chapin, III, of the Class of '32, I believe. You can see that the undesirables are gradually being weeded out and we are approaching the ideal of a 100 per cent M.I.T. staff.'"

Always a faithful reporter of Course III activities, Professor Locke this month contributes the good news that at the beginning of March, Ford Boulware was able to be back doing light office work, having discarded his crutches. He writes further: "John P. Hayes, after losing out on his job at Butte, Mont., due to curtailment in copper mining operations, visited the Salt Lake district, seeking mining work. There he saw Frank Milliken, Mike Kuryla, and Ford Boulware. Milliken had put on a little additional weight, while Kuryla, as a result of his job of mucking, had taken off what fat he had and seemed to be in the pink of condition. Boulware was still convalescing from his

1936 Continued

mine accident. From Salt Lake City, Hayes went to Los Angeles district, making his headquarters at Long Beach and tramping over Los Angeles, following every possible lead for a job. He says that after wearing out a couple of pairs of shoes and putting a small fortune into telephone slots, he was able to get the assistance of two Alumni in the oil business, which landed him in a temporary job in a Los Angeles warehouse of the Union Oil Company. After he had been there a week he was transferred to Bakersfield, Calif., on a job in the paleontology laboratory, which appears to be permanent. His sojourn in Long Beach was most profitable from another angle, in that while he was tramping the Los Angeles streets, he kept his eyes open and met a young lady who looked most attractive to him and in whose eyes he apparently found favor, with the result that just as soon as he started on his permanent job in the paleontology laboratory at Bakersfield, the young lady became Mrs. Hayes. They have rented a nice little house and started house-keeping."

Course VI. We are pleased to announce the marriage on February 18 of George H. Temple, Jr., to Miss Lorraine Wood of Cambridge. The ceremony was performed by candlelight in Christ Church, Cambridge. After a wedding trip spent skiing in the north, the couple settled at Riverbank Court Hotel. Temple is on the staff at Tech.

Course IX. It is a pleasure to announce that Dick Odiorne, 52 Augustus Avenue, Roslindale, Mass., has accepted the position of Secretary for this Course. Dick promises to do his best to secure news about this group, but I suggest that a letter to him at the above address would help his work immensely. The only news this month is the announcement of the engagement of Miss Jane Bartlett of East Williston, Long Island, to Wilfred M. Post, Jr. Post was graduated from the Park Air College in East St. Louis, Ill., and is now at Allentown, Pa., where he is part owner of the Lehigh Aircraft Corporation.

Course X. This is the concluding installment of the letter from El Koontz which was started in this column last month: "Gerry McMahon, as always, crashes through with some news, and this time it's that he's located out in Ponca City, Okla., working as lubricating oil technologist for the Continental Oil Company. Naturally, there aren't too many familiar faces out there, and Gerry is wondering if the letters his classmates had promised him have been held up by Indians. In his spare time, Gerry has been devoting some of his energy to the Reserve Officers Training Corps, and some to the local chapter of Alpha Chi Sigma of which he's secretary. Before I forget, does anyone know the addresses of Lou Young, Pete Weinert, and Howard Anderson? The last I'd heard, Lou Young was with Carnegie-Illinois Steel in Pittsburgh, but mail sent there has been returned to me. Similarly, I understood that Pete Weinert was at Long Beach, Calif.,

but none of my efforts to reach him there has met with success. As for Howard Anderson, I'd heard that he was a foreman in charge of the student group at Carnegie-Illinois in Pittsburgh, but I haven't been able to reach him at any of the addresses I have. My last letter from Bob Newman tells that he's still in Cleveland, working in the incandescent lamp division of the Generous Electric Company. . . . It appears that Bob is candid camera mad and consequently has been too wrapped up in his hobby to pursue the allegedly fair sex. He also mentions having seen Jim Ullman recently in Cleveland at one of the Technology dinners. Lou Smith of the West Virginia Smiths, writing from Charleston, managed to pack more news in his short note than I thought possible. When he wrote me early in November, he said that after the first of December, he expected to return to New York to take up the study of law in the patent department of his company, the Union Carbide and Carbon Company. The work will, he expects, lead to a position involving more the technical than the legal end of patent law. Lou also mentioned that by dead reckoning on the slide rule he expected to become a papa at 12:15 a.m., January 20, 1938. (Congratulations, Lou.)

"In a very, very brief note, George Parkhurst writes that he's 'working in the laboratory of the Doyle works of the E. I. du Pont de Nemours' plastic department at Leominster, Mass.' Short and sweet. Another very, very terse note that came in answer to my questionnaire just about made me throw up my hands and say, 'What's the use?' but at least it was an answer, which is more than I got from most of the lads, so I'm repeating it here: 'C. A. Mapes, Still at Harvard, Engaged.' My note from Matt Hayes bears the distinction of being over a year late, figured from the time I sent out my first questionnaire. It says in brief that he is working as an assistant in the experimental laboratory of the Houde Engineering Company, Buffalo, N.Y. Ben Fogler has been one of my faithful correspondents and it's always a pleasure to hear from him. Ben writes that he is still with the A. C. Lawrence Leather Company at Peabody, Mass., and is getting along quite well, in fact better than would be expected considering that the leather industry is experiencing the worst slump in 15 years. He has been working with the research director, lately on work involving the installation and operation of new driers that give promise of doing great things for the leather business. Ben is engaged to Miss Kate Thursfield of Waterbury, Conn., and has hopes of going off the deep end next month if the present recession doesn't offer too many financial difficulties. He's evidently serious about it, too, since he writes that he spent his summer vacation holding hands with the lass and watching the J boats skim up and down the coast. Ben in his letter also partially clears up the question in my letter above regarding the whereabouts of Pete Weinert. He says that Pete is still with the Universal Oil Products

Company on the West Coast and at present is working in the service department on the installation of a new polymer gasoline plant (whatever that is). Ben also mentions that Frank Gregory is with General Electric in their plastics department and is doing well, and also gives indications of having marital intentions.

"Art Jaeger, after a silence of two years, sent me an interesting letter saying that he is working for the R.C.A. Radiotron division at Harrison, N.J., and in spite of the fact that he has to get up at 5:45 in the morning in order to get from Brooklyn to the plant at 7:45, is quite enthusiastic about the job. For a time he was foreman in the electroplating department and then was transferred to parts and process engineering work, having to do particularly with such parts as the 'magic eye.' At present, he is pinch-hitting for the foreman in the chemical preparations department and is responsible for such chemical items as cathode sprays, insulating materials, magic-eye sprays, and marking ink. Art mentions in his letter that John Hord '34 is at the plant doing research on acorn tube types. He also says that Fred Judd '34 and Milner Wallace were recently laid off because of the terrible business conditions. Wallace had apparently been getting along splendidly as an engineer in the tube department and a short time previous to the news had gotten a sizable raise in salary. . . . From Wilmington, Del., comes a fine, long letter from Charlie Holman. Charlie traces his history from June, 1936, as follows: First, practice school, X-B, followed by a period during the spring of 1937 as an assistant in the Chemical Engineering Department at the Institute, mainly as chief stooge for Professor MacAdams '17. His thesis was completed during the summer, and in August he started work for Du Pont at the experimental station at Wilmington. Charlie says his work in research at present is much like a thesis, except that, surprisingly enough, he occasionally produces results. He also mentions that Don Kenny and Osgood are working in the same plant on much the same kind of projects and that they see quite a bit of each other. Charlie denies previous rumors which appeared in your columns to the effect that he intends to get married in the near future. He admits, however, having spent his summer vacation in Buffalo with the lady in question, and that sounds sufficiently incriminating. He also hints that Osgood is soon to make the plunge, if you're looking for gossip. Holman tells me that McGrath and Webb were recently down to see him and adds that they're living together in New York. . . . Charlie requests that you broadcast an appeal in your column for Wen Fitch to answer some of the letters addressed to him. It seems that since he's been married . . . he won't write.

"Dick Denton wrote me a perfect classic of a letter on the letterhead of his company, the Sun Chemical and Color Company of Harrison, N.J. It's so good, I'm going to quote at least a part of it:

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I'm residing with a penniless minister in Irvington, which, like Harrison, is another suburb of the thriving city of Newark. They say that everything in the world is made in Newark, but, so far, my personal experiences have not proved this to be so. I am working in a dirty ink laboratory and am in no danger of losing my job for a while as I carry a goodly part of the company's inventory on my person (ink, get it?). George Robinson is working in Woodbridge, not far from here, and we see each other not infrequently. We are thinking of having a Course X banquet here in Newark sometime soon. We can muster Ed Everett and Dick DeWolfe from Kellogg in New York City and Henry McGrath and George Webb from Kellogg in Jersey City—also the inimitable Rudy Ozol from Passaic, to say nothing of George Hain from Montclair and Jean Wagner from New York. Jean, incidentally, was working with me all summer, but has now been transferred to the main General Printing Ink laboratory in New York City. Jimmy Vaughan is working for the Standard Oil Development Company. I hope that that banquet came off. (Secretary's note: I hope that it came off, too. Moreover, I recommend the idea to other groups wherever they may be. El offers to the New Jersey group the names of other Course X lads in the general vicinity if they desire them.) George Robinson, in his letter, seconds the idea advanced by Denton that a Course X reunion be held. He also adds that since leaving the Institute last June he has been working as chemist for the Hart Products Company, manufacturers of fine textile chemicals, in Woodbridge, N.J. So far the work has involved analysis, research, development, and process control.

"The two most beautiful letters I received, I've saved for last. One was from Mike Pettebone and the other from Tom Terry. They're both living together in Baton Rouge, and I'm going to quote wholesale chunks from their letters, as I couldn't otherwise express their thoughts. First from Micky: 'At present I receive a check at fairly regular intervals, bearing the name of the Standard Oil Company of Louisiana. They're all good and made out in fair quantity—fair for what I do to get them. The location of said organization is the muddy bank of the equally muddy Mississippi at a hole in the ground that people call Baton Rouge. I'm in the process engineering department and am working more on the economics of the situation than the actual engineering—praise be to God! The work involves such things as evaluating the new crudes that come in . . . and menial labor of similar ilk. It's the sort of thing I'm interested in.' Next from Tom Terry: 'Life in this Citadel of Erl is right satisfactory, that is, every other cloudy Thursday if you keep your reflux ratio high. A group of us in the development department are engaged in collecting meaningless data so that the advertising people can brag about research in their advertising. Five of us have hired a chateau to prove that engineers can be domesticated, and every week-end we mow the lawn, and in between we

sulk in a corner and stare at the cobwebs. This village swarms with Tech engineers, among them, Pettebone, Squires, Ogorzaly, Read, Cogan, Hockberger, and Reday.' Tom also adds that the above-mentioned chateau is on R.F.D. No. 3. . . .

"That is all the news I have except to add that at the Technology club dinner last week I saw again Jack Gardiner and Bob Worden. Jack is working with the purchasing department of Philco here in Philadelphia, and Worden is with the labor relations department of Campbell Soup Company in Camden, N.J., and is doing nicely. As for myself, nothing particularly new to report." Thus endeth the second installment of the Koontz letter. — Jerry Chapman asks that I correct a recent error in this column and credit him only with the S.B. Degree. So be it.

Course XIII. On January 29, Miss Margaret Lela Edwards and Carl Engstrom were married in Cambridge. The newlyweds have made their home in Belmont. Carl is still teaching at Technology. Also soon to join the ranks of the benedicts is Bill Budd. His engagement to Miss Velma Vroom of Somerville has been announced. Bill is a draftsman with the Bethlehem Steel Company. More news about the group is given in this letter from Art Wells: "It all started with a matter-of-fact discussion from which sprang ideas which grew and crystallized by leaps and bounds. The result is the birth of the Seaboard Navigation Company, incorporated under the laws of Delaware on March 3. The first directors' meeting was held in New York City on March 5, and at that time the following officers were elected: President, John Stapler; Vice-President (in charge of operations), Alden Anderson; Vice-President, Frederick Drake; Vice-President, Duncan McInnes; Secretary, Fairfax Leary, Jr.; Treasurer, John Myers, XVI. The first venture of this corporation will be a freight transportation service between Boston and the Penobscot region, touching at the ports of Bangor, Rockland, and Bucksport, Maine. A small vessel of the motor coaster type will be used, and according to present plans the first sailing will be from Boston the latter part of April. For several months a study of the possibilities for a venture of this type has been carried out by the parties mentioned above, and when the feasibility of a water freight service between Boston and the Penobscot region was determined, no time was lost in organizing. I am looking forward to reporting the future progress of the Seaboard Navigation Company and its interesting venture. — Shortly after graduation, when several members of Course XIII took up work in and around New York City, we began meeting quite regularly, usually weekly, for sociability as well as for the opportunity of exchanging experiences in the steamship business. As acquaintances were made among other young men in the steamship business, the group began to grow. It was decided that if, as a group, we took up seriously the study of maritime problems, we might in time aid in the solution of these prob-

lems. It was also decided that we could best carry out this work by first forming an organization to bind the group. With this in mind a constitution and by-laws were drawn up. These were completed and approved by the charter members of the organization on March 5. Sixteen steamship companies are represented in the group. M.I.T. is represented by Norman Thomas '31, Henry Humphreys '34, Edgar Sviki's '34, and Harrison Woodman, Jack Stapler, and Art Wells of the '36 group." In closing, Art gives the information that Richard Anderson is now stationed as lieutenant at the Philadelphia Navy Yard and that Alexander Veasey is a lieutenant, stationed on the U.S.S. *Indianapolis* with headquarters at San Pedro, Calif.

Course XV. The only news from any member of this group is a report that Frank Stevens is working for the General Cable Corporation in White Plains, N.Y.

Course XVI. The influx of Technology men to Buffalo has been augmented recently by activity in the Curtiss Wright plant here. Recent additions to the force are John Drew, Jack Hamilton, and Dick Koegler. Drew and Koegler are working in stress analysis, while Hamilton is in the newly organized propeller department. I gather that Dick disliked the California weather. He made the 3,000-mile trip from San Diego to Buffalo in five days; I wonder if his hasty leaving was because he was chased out by the chamber of commerce for failure to boast about the climate. Ham has moved wife, daughter, and furniture to Buffalo, and is settled in a cozy first-floor apartment with a yard for the baby to play in. Left behind at Chance-Vought is Bus Schliemann, who writes: "The question of Charlie Endweiss' address is cleared up by a letter which I received from him this week. Charlie is in the Marine Corps, second lieutenant. His address is VMS-3, F.M.F., Charlotte Amalie, St. Thomas, Virgin Islands. He is at present attached to Marine Scouting Squadron Three. The F.M.F. in his address means Fleet Marine Force. He starts out in his letter making a crack about our good old Voughts. Of course, they are planes for men to fly, not for boys to play in, Charlie. He has flown quite a few types by now, large and small, fighters and observations, multiengine patrol planes, and all the navy had to offer, from his letter. But he likes the fighters best. Some catapulting also came his way, and it is too bad his very expressive description of that sensation cannot be printed. The work is all flying and no pushing a slip stick as is the case with the majority of us. With good pay, perpetual summer, and a nice Buick to drive around, Charlie feels that 'it is the service for me.' I guess that sounds mighty attractive to a lot of us. — Runkle and I finally made contact. As has already been printed, he is with Curtiss Wright, St. Louis airplane division. He and several others of the Class are helping to build a large high-altitude transport which they feel is really going to be hot. Those working with him are Jack Chapper, Sangster, Milt Lief '37, and Al Boyajian '35 — also

1936 Continued

Ed Dashefsky, and it seems to me I remember someone else from our Class down there but I can't think who it is right now. Runk corrects me in several particulars in his letter: Chapper was not in the light-plane field at Porterfield, he was working on an army pursuit. And Kansas City and St. Louis are not very close but are 245 miles apart. St. Louis does not sound very interesting. . . .

Course XVII. From 2513 Park View Avenue, Knoxville, Tenn., comes a letter from Dick Hickman, who is designing dams for the Tennessee Valley Authority. He reports zero news from the Course but tells a bit about himself: "We are still grinding away at our power house. Inasmuch as both Chickamauga and Guntersville dams are very similar to each other, in addition to being well advanced both in construction and design, the design sections were combined at Christmastime. . . . Our outfit certainly is in the public eye. Knoxville politics, T.V.A., and Hitler are running abreast as regards space in the local papers. Other activities are as usual. I've lived here long enough now to feel quite at home. One of our sixsome . . . was married recently and we have an Auburn '37 man as a replacement."

Course XVIII. Eli Grossman has some good news about some of the members of this group. He says: "We never did know what branch of mathematics Ed Christopher was specializing in at the John Hancock Life Insurance Company, but he has just done himself proud in addition, a baby girl, born on February 11. — After some time in the hospital, Doug Hawks recovered from his appendicitis operation, and is again working for the Connecticut Mutual Life Insurance Company actuarial department. — Not long ago Di Salvatore, Ken Arnold, Dr. Fish, and myself spent the evening together. Phil Di Salvatore, who is now a mathematical research assistant at Princeton, explained how he is applying higher geometry to statistics. He has found practical applications for this in psychology. Dr. Fish, who received his Ph.D. in '35, is working for Combustion Engineering Corporation. As for myself, I am pursuing my actuarial studies now while working for the United States Life Insurance Company. My interest in the Far East is still very large, and I hope some day to spend some time there." As a conclusion, I repeat again the question: "Have you Alumni Day, June 6, on your calendar?" — ANTON E. HITTL, *General Secretary*, 491 Ashland Avenue, Buffalo, N.Y. ALLEN W. HORTON, JR., *Assistant Secretary*, Room 3-210, M.I.T., Cambridge, Mass.

1937

Our first class reunion is but a month away, and it is significant to every one of us that this year marks the end of the physical connection of the Rogers Building with the rest of Technology. The final departure of the School of Architecture from Rogers will be the outstanding feature of Alumni Day, Monday, June 6. I am sure we all feel that this is the reincarnation of the spirit which has made our school so preëminent.

The standings of the various groups of the Class in respect to contributions to the Alumni Fund Drive was quite a surprise to me when I first worked them out as they appear below with rankings as to what I call "load factor," which is the ratio between the amount contributed and the per cent of the Class in that group: (1) recipients of Ph.D. or Sc.D., 2.94; (2) recipients of S.B. or B.Arch., 1.52; (3) 3 to 4 years, no degree, 1.09; (4) recipients of S.M. or M.Arch., 0.88; (5) Graduate School, 0.82; (6) 1 to 2 years, no degree, 0.33; (7) 1 year or less, 0.11; (8) 2 to 3 years, no degree, 0. The doctors top the bachelors, probably because they receive higher salaries and have a higher respect for the physical well-being of technical students. But why do the bachelors top the masters; and why should those individuals who should have been disappointed in not receiving degrees after three or four long years collectively top the masters also?

Illness on my part has allowed an accumulation of three months' material. Try to avoid the depletion of vitamin reserves which made me the helpless victim of grippe, flu, and the others — my first illness since the age of eight. Someone asked: "Why not print something about what you are doing, Windy; all we know is that you are in Bound Brook, but why?" Suffice it now to say that I am designing, building, and testing an automatic machine which I, among others, believe will work as I have planned. The design is completed and the building is nearly finished; so until then anything can happen. My experience with this one machine gives me a very great respect for the organization behind plants which do exactly as I have done, except that dozens of projects are proceeding at once. There is a great deal of satisfaction in seeing your own ideas take form in metal and actually work as you expected.

From the newsprint I note that Phil Peters has shown really fine taste (Vic Kron sent me a picture): His engagement to Miss Ruth Bell of Wellesley Farms was announced on February 6. On January 2, Mr. and Mrs. Merle Emmanuel Gardner of Brockton announced the engagement of their daughter, Carolyn, to Joseph H. Stone. (Good luck, Joe!) Bill Chandler's engagement to Miss Barbara L. Dickinson was announced on January 9, and other engagements are those of Roland Boucher to Miss Dorothea Hiltz of Brookline on December 20; Dick Westfall to Miss Jeannette Wallace of Newton Center and Nahant on December 10; Horace B. Van Dorn, 3d, to Miss Eleanor Marjorie Jackson of Belmont on December 9; Smith C. Toulson, Jr., to Miss Madelene Diane Sloane of Mamaroneck, N.Y., on December 22; Ralph P. Webster, Jr., to Florence Esther Caswell of Lexington, Mass., on January 1; Melville E. Hitchcock to Miss Dorothy Eliot Sperry of New Haven on January 22. Only two marriages have been noted since mid-December: Kenneth B. Gair to Miss Helen Charlotte Richards on December 24 in Maplewood, N.J.; William L. Lovejoy to Miss Constance Clara Kelsey in Lynn.

The town of Milford, N.H., has engaged the services of Earl D. Fraser, a planning consultant, to determine whether or not it is a typical New Hampshire town, as has been alleged. I shall be very much interested to learn whether or not Earl decides it is typical.

Professor Hamilton '14 sends word that Walter L. Hughes, Jr., is doing very well at Biokemiska Institutet in Stockholm, Sweden, and likes his work very much; he is studying under the Moore Fellowship. Walter says in part: "Conditions for work here are most agreeable. The laboratory, while not unusual, is nevertheless adequate; my co-workers are friendly and instructive; and the work itself is the most interesting I have yet done. . . . Among the laboratory's virtues should be mentioned its international atmosphere, for while dominated by Germans, it nevertheless contains a fair percentage of Swedes, a Russian, a Czech, a Hungarian, and another American. . . . Stockholm life is calm enough; however there are an opera, a symphony, a few theaters, an excess of cinemas, inexpensive food (if you can decipher the menu), plenty of cloudy weather, and now 20 inches of snow. The sun is so low that, even when clear, we never see it in the city; it is up from 9 A.M. till 2:30 P.M. . . . Europe is an interesting place." We are very glad to see that Walter is enjoying that rare combination of conditions which makes the life ideal.

From Professor Locke '96, I learn that E. M. Fischer, III, is working for the American Smelting and Refining Company in their Globe smelter. He "arrived in Denver on June 24 . . . reported to R. P. Reynolds '06, general manager for the company in Colorado, was put to work the following Monday morning, and inside of ten minutes was making chemical determinations. . . . He is enthusiastic about Denver and ranks it next to Boston for attractiveness as a place of residence." Also from Professor Locke: Paul Allen "went to work for the Inland Steel Company, the latter part of June, and spent a month on the engineering staff at the Morris and Greenwood mines at Ishpeming, Mich. Later he was transferred to Crystal Falls, Mich., where he had the job of supervising a prospecting drilling campaign, which gave him a lot of experience. He expected to return to the engineering work at Ishpeming when this drilling campaign was complete."

A very interesting letter from Al Woll (Pioneer Asphalt Company, Lawrenceville, Ill.) contains some news for all: " . . . Phil Short writes from Berkeley, Calif., where the sun always shines except when they have rain. He, Ro Ortynsky, Dazi Sommer, and Kerry Arabian are embryonic oil men engaged in development and testing asphalts at the Shell laboratories. George Levy, when last heard from . . . was working for his dad in the hardware game. Li'l Abner White . . . last September was working for an engineering company in East Hartford. About Wee Willie Penn, we hear that he is furthering his studies in the Graduate

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School and is now located at the Boston Station. . . . While working in New York City for a few weeks with our parent company, I attended the meeting of the Alumni Fund Committee of the Technology Club of New York. There I met Banker Wemple. Also I met Al Busch, who is going through the 'up the ladder' routine at R. H. Macy's. When last heard from, George K. Megerian was working for General Electric in Lynn; Leo Moore was studying law at Harvard; Walter Haight was working for Eitel's restaurant chain in Chicago but left it. Now he is working at the Stevens Hotel while waiting for new possibilities in and around Chicago. Paul Lipnick was 'statisting statistics' on some survey for Coca-Cola.

" . . . Milt Lief writes that he is aiding in the design of a 30-passenger plane in St. Louis, but he doesn't mention for whom. He is working with 85 engineers. One of them is Eddie Dashefsky '36, XVI. Stan Zemansky is working for the North American Aviation Company in Los Angeles, Calif. . . . If you're interested in my doings, I'm employed in a town of a staggering sum of 6,301 population. The odd one represents me — no cracks. All kidding aside, I am working for the Pioneer Asphalt Company, where I carry on research in the development of new asphaltic products. The work has always interested me, even before I entered M.I.T. . . ."

From Archie Ahmadjian (21 Ruth Street, Hammond, Ind.): "After graduation I spent a pleasant two weeks at Fort Devens. . . . After camp I started work with the American Steel Foundries at their plant in Hammond. Joe Heal is the only other '37 man with the company. For two months, Joe and I slammed this 'beautiful' city of Hammond. Suddenly . . . Joe began to act queerly: He liked the railroads that went through the city, the smoke of the steel mills. . . . I started an investigation. Reason: Miss Marian Achroeder of Lansing, Ill. Result: The wedding took place on January 8. Yours truly was an usher at the wedding. . . . Al Acker, my thesis partner and side-kick, dropped in to see me about three weeks ago. He's working for a marketing research organization and does lots of traveling in Kentucky and West Virginia. . . . At the Technology Club of Chicago dinner, where we heard our President, Karl Compton, I ran across the following '37 men: Al Roetzer, Commonwealth Edison Company; Dexter Gaston, Ingersoll Milling Machinery Company; Bob Jordan, Crane Valve Company; Goodwin deRaismes, American Can Company; Vladimir Haensel, Universal Oil Products; and A. W. Chandler. At home for the holidays, I ran across Muzzie Bakarian, who's doing wonders with the Dow Chemical Company at Saginaw, Mich."

From Norm Birch (2014 Logan Avenue, Middletown, Ohio): ". . . I can say a little something of quite a few of the fellows, even though some of it is as hard to believe as the recently acquired news of Bill Pattison of the Dekes. Bill

Stapleton, who is working with Armco and is one of Bill's high school chums, says Bill is now working off the southeast coast of the country with some deep-sea salvaging outfit, and that he is in charge of about 40 divers. There's enough romance in that job to satisfy even the most hard-to-please damsel. . . . Bob Ferguson of the Corporation XV plutocrats is connected with the Aluminum Company of America at Grantwood, N.J. He lives close enough to his home (in Rye, N.Y.) to go home almost every week-end. Which leads us to Bob Thorson, the "Iron Man" of crew, who has finally come to roost in Bayonne, N.J., not too far from Fergy. Bob started in New York City with the Texas Company (Texaco) and was sent to Charleston, S.C., to build a dock. While there he met Al Dunning '32, who was freshman crew coach for the unbeatable Class of '37, and spent quite a bit of time with Dunning and wife. When next heard from he was attempting to drown out one of Jacksonville's (Fla.) fine hotels by going to sleep while drawing water for a bath. And now he has finally settled, for a while at least, at Bayonne. . . .

"Wayne Pierce, last year's captain, is connected with Chance-Vought Aircraft Company in East Hartford, Conn. Wayne is doing very well and is directly connected with the design and testing of the planes. He also has a sizable finger in the designing and producing of some of the innovations in the two new shells which the Institute has acquired this year. Wayne became engaged at Christmas to Miss Eunice Miller of Concord, Mass., whom many of us have seen at M.I.T. dances during these past four years. . . . While home I managed to spend several days at the Institute and for those who, like myself, are in some far-away neck of the woods, I met some of the boys still haunting the home grounds. Bob Brauer has a scholarship in chemistry and is in the midst of a design course which keeps him alternately at the Institute and at Buffalo, N.Y. Blake Loring is carrying on further work in metallurgy. Tom Kinraide, whom I couldn't find at his duties, is also working at advanced metallurgy. Al Hazeltine is another man who is elusive, even to the extent of cutting the accounting course at which I hoped to catch him. . . . I did speak to him over the phone and he sounds more serious than ever.

" . . . The Course III boys are rather well separated: Norm Mathews is getting along well in the metallurgical department of the National Tube Company at Lorain, Ohio. Al Haskell is at Duquesne, Pa., with the Carnegie-Illinois Steel outfit and likes everything except the town. Also with Carnegie-Illinois are Cohen, Vanderman, Tibbetts [now Bethlehem Shipbuilding], and Current. . . . Indirectly I have heard news of Henry Guerke and Harry Goodwin, who are both with Bethlehem Steel. It seems that at the conclusion of the Loop course for all new men, Henry and Harry ranked first and fourth, respectively. As Al Haskell wrote about it: 'M.I.T. Rah, rah, rah!' On top

of that, I understand that Harry is now a married man. The girl was Miss Caroline (I'm not sure of that first name) Ford. . . . Finn and Fischer are still at least in calling distance. Both are connected with the American Smelting and Refining Company somewhere in the Rockies. I know that Finn is at Leadville, Colo., and likes the altitude in spite of having spent most of his life in Lynn. Going still farther west, Harry Kohl is with Boeing Aircraft in Seattle, Wash., and is rapidly becoming an armament expert. He is designing newer and nicer ways of mounting machine guns in planes. Also with Boeing and at an adjacent desk, so that the two can pleasantly while away time, is Jim Clifford. Others in the land of milk and honey weather include Pappy Pitkin and Norm Robbins. . . .

"Here in the Middle West we have but little news. Outstanding is the very impressive marriage of Dan O'Connor, Jr., and Miss Catherine Ellen Burke at Cincinnati on November 4. I was fortunate enough to be able to attend. . . . I understand that Dan and his bride are now living in Michigan. Bob Jordan, I hear indirectly, is making rapid strides in the Crane Valve Company at Chicago.

"There are three of us Tech men with the American Rolling Mill Company here at Middletown, Ohio: Bill Boudreau, who was a graduate student at the Institute until last June, is in the new research building (*adv.*) and has recently had a slight upward boost; Jim Newman has been transferred from the employment reserve to research and is getting along fine in his work; I am still rather loosely connected with the metallurgical department in the sheet mill control laboratory, working regular turn work and learning quite a bit about this business of making sheet iron. . . ."

From Gil Mott (111 Gem Avenue, Bridgeport, Conn.): ". . . I am working at the Bridgeport Brass Company in my home town, having recently completed a six months' training course. They have now placed me in a regular job — development, improvement, and so on, in one of the mills — which shows some promise. As a side line I'm teaching trig and calculus in a night engineering school. (I hope you enjoy your laugh.) It's quite a treat to be on the other side of the desk. . . . My brother, whom you'll remember, is now a freshman at Tech. . . . Tech men seen since graduation: Cliff Lytle (Scovill Manufacturing Company, Waterbury, Conn.); Max Kendzur (Fafnir Bearing Company, New Britain, Conn.); Karl Goodwin [job?]; and Fred Claffee (Remington Arms, Bridgeport, Conn.); Phil Dreissigacker and John Gander (Farrel-Birmingham, Ansonia, Conn.); Ed Wemple (Remington Arms and Bridgeport Engineering Institute); Brent Lowe (Scovill Manufacturing Company); John Rowell (American Brass Company). . . ."

I'll see you all in the June issue and, I hope, at the reunion. — WINTHROP A. JOHNS, *General Secretary*, 114 Beechwood Avenue, Bound Brook, N.J.



**FOREIGN
GOVERNMENTS
WANT TO KNOW**

Why can this man **HAVE MORE and WORK LESS?**

THIS is the mystery man. Dozens of foreign commissions have traveled thousands of miles to find out why it is that, working only 40 hours a week, he can buy an electric refrigerator with one month's pay. Workers in foreign lands labor many more hours a week, but to them a refrigerator is a luxury beyond their reach.

Why is it this typical American workman can buy an automobile with 4½ months' pay? Few workers abroad have automobiles—it would take all they could earn in a year to buy one. Why is it that American workers enjoy radios, telephones, electric lights, and hundreds of

other comforts and conveniences almost unknown to foreign workers? Why do we enjoy the highest standard of living known in any country?

The American worker has more because he produces more. And he produces more because he has abundant power to help him—power that increases his own ability manyfold.

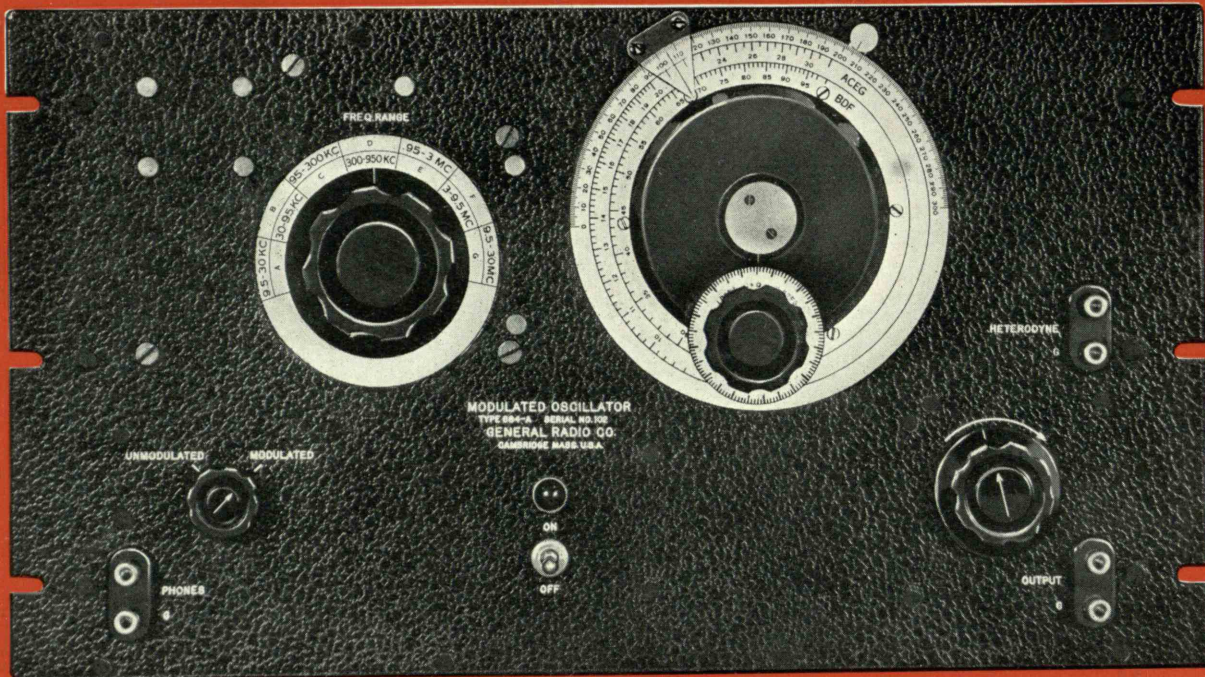
General Electric scientists and engineers, by developing electric machinery, have put into the hands of American workmen the greatest force ever devised for producing more goods for more people at less cost—the force of electricity.

*G-E research and engineering have saved the public from ten to one hundred dollars
for every dollar they have earned for General Electric*

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NEW MODULATED OSCILLATOR

THIS new G-R general-purpose modulated r-f oscillator fills a long standing need for a source of r-f power covering the major portion of the useful radio spectrum, with good output and excellent frequency stability. Its advanced electrical and mechanical design includes a number of features which combine to make it an extremely useful laboratory driver with many operating conveniences.

CHECK THESE FEATURES

1. WIDE FREQUENCY RANGE — 9.5 kc to 50 Mc. *Direct reading* to 30 Mc; calibration chart 30 to 50 Mc.
2. OPEN TUNING SCALE — effective scale-length of *38 feet* between 9.5 kc and 30 Mc.
3. IMPROVED TUNING CONDENSER — cast aluminum one-piece frame — ball bearings — four spring contacts to rotor.
4. EXCELLENT STABILITY — frequency calibration good to 1% — good enough for approximate frequency measurements.
5. HIGH OUTPUT VOLTAGE — 25 volts at 100 kc; 30 volts at 1 Mc; 5 volts at 15 Mc; 1.5 volts at 30 Mc.
6. BUILT-IN VOLTAGE REGULATOR — regulated power supply insures constant output voltage over normal fluctuations in line voltage.
7. OUTPUT AMPLIFIER — isolates oscillator from output circuit — effects of modulation and load variations on frequency are negligible.
8. 1000-CYCLE INTERNAL MODULATION — supplied by modulating oscillator — 1,000-cycle terminals on panel for a-f testing.
9. BUILT-IN DETECTOR — for obtaining heterodyne beats when oscillator is not modulated.

TYPE 684-A MODULATED OSCILLATOR — A-C Power Supply.....\$340.00
 Battery-Operated Model..... 320.00

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